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Responsive Listener Behaviors of School Aged Children: In Relation to Academic Achievement and School Attractiveness

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Responsive Listener Behaviors of School Aged Children: In Relation to Academic Achievement and Social Attractiveness

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CHAPTER I

INTRODUCTION

After a fall, a six-year-old boy cries incessantly. Upon reaching him a teacher inspects the wound, hugs the child, listens to his story, points to dangers, and assures him of his safety. The boy quiets, nods at her instructions, hugs the teacher, responds "ok" to her directions, and eventually smiles as the pain is "all gone."

An array of socially responsive behaviors can be observed in the above interaction. A cry, a hurt look, a reassuring smile, a gentle touch, a nod of the head, eye-contact, a simple "ok," and a listening ear are merely a few of the types of responsive behaviors that unobtrusively underlie most conversational exchanges between humans. These are the types of responsive behaviors that are the focus of this research.

This study is the third in a series, conducted by the author, which investigates the development of these responsive listener behaviors in children. Responsive behaviors are defined as social behaviors which help acknowledge that one is

listening, attentive, interested in, and understanding of the concerns of another. These behaviors may include verbal responses such as "ok," "uh-huh," and "oh," and nonverbal responses such as gazing, smiling, and nodding. All of these cues are known as backchannel responses. Backchannel behaviors serve as conversation facilitators which tend to convey mutual interest, help relay meaning, and in general serve to maintain communication (Miller, Berg, & Archer, 1983; Miller, Lechner, & Ruggs, 1985; Purvis, Dabbs, & Hooper, 1984).

These behaviors have important functions for adults. Males who were seen as responsive listeners have been shown to use verbal types of backchannel behavior (e.g. "uh huh," "oh,") to stimulate conversations. Women, on the other hand, tend to rely on nonverbal responsive behaviors such as smiling and gazing (Miller et al., 1983). This research also indicated that these behavioral skills were large contributors to social attractiveness and popularity. (It should be noted that the terms, social attractiveness and popularity, will be used interchangeably throughout this paper).

Backchannel responses are also important in conversation maintenance, or in aiding what is called turn taking. Verbal, as well as nonverbal, cues help conversations by signaling when the speaker may or may not relinquish the floor. A number of studies have shown that backchannel responsiveness plays an important role in adult social interaction. Adults use of backchannel cues has also been linked with attraction, popularity, intimacy of friendships, and the ability to elicit intimate self-disclosure.

Backchannel behaviors have also been documented in research on children as well. Smiling in infants, as early as birth, has been noted (Emde & Koenig, 1969). However, this behavior does not appear to be responsive until the first social smile arrives at 8 to 12 weeks of age (Sroufe & Water, 1976).

Studies (Miller, Lechner, & Ruggs, 1985; Lechner, 1986) have documented backchannel communicative responsiveness in preschool children (aged 3-5 years), and have shown developmental trends in the use of these behaviors. Preschoolers use a variety of verbal cues (yeses, ohs, uh-huhs) and nonverbal cues including eye-contact and gaze,

smiling, and nodding. Furthermore, older preschoolers use more of the responses, both in amount and kind, than did their younger peers.

Lechner (1986) was unable to establish a relationship between use of responsive behaviors and popularity ratings for preschoolers. Because this relationship had been documented in research on adults, it was hypothesized that responsive listening for preschools may be an important variable in determining popularity.

There is much empirical evidence concerning the importance of backchannel behaviors for adult interaction and relationships. Among children, anecdotal evidence concerning exceptional cases of infant development underscores the importance of such cues. Citing research on blind infants (Fraiberg, 1974), there is striking evidence documenting how much less responsive blind infants are. In addition, the adverse impact on early relationships from this lack of responsiveness is significant.

While studies have demonstrated that preschoolers use backchannel behaviors in human interactions, these studies failed to show how usage of these cues might affect interactions among

children. One study, (Hazen & Black, 1989) established that preschool children, with better developed overall communication skills, are liked better than peers with poor communication skills; the question remains: Are children who use such responsive listener cues, such as the specific backchannel behaviors, seen as more popular? If so at what age does use of listening skills begin to relate to social attractiveness? Also, are there differences in the use of these cues among children of different races or cultures? These are just a few of the questions that need to be addressed. With these questions in mind, some goals have been identified for this research project

One goal of the present study is to extend the findings on backchannel conversational responsiveness from the adult literature, and from studies including preschool subjects, to research on early elementary aged children. Specifically, are children who use more responsive listener cues, as rated by adults and peers, seen as more popular? A second goal is to investigate the relationship gender and age have with the use of responsive listening skills. Will older elementary school subjects use backchannel behaviors with more

frequency than younger peers? Will females use more nonverbal responsive listening skills than males?

The third goal is to investigate some new issues with respect to responsive listening. The first is an investigation of racial or cultural differences in the use of these specific listener skills. Are there any identifiable responsive listening differences between African American subjects and Caucasians? The second is a look at relationships between responsive listening skills and academic achievement. Are there relationships between achievement and responsive listening? These are a few of the issues that are addressed by this research.

To address these goals and important questions, two instruments were developed, one to measure listening skills and the other to measure social attractiveness. A special story-type script, developed by Miller et al. (1983) was updated for this study. This script has been shown to reliably elicit responsive listener behaviors in children (Miller et al., 1983; Lechner, 1986).

Popularity questionnaires, utilized by teachers and peers, were also updated from previous

research (Lechner, 1986). Students were presented their class picture and asked a series of questions following research suggestions from Hazen, et al. (1989). The teacher popularity measure involved a brief questionnaire in which teachers were asked to rate students on how much they enjoyed interacting with individual students.

The subjects in this study attended two schools from a middle to lower-middle socio-economic suburb of Chicago. There were 101 subjects, one-third each from first grade, third grade, and fifth grade respectively. Subjects were also approximately evenly divided by race and sex.

A special room was prepared to provide a standardized testing environment where videotaping could take place. Subjects were first familiarized with the experimenters and the testing room to assure comfort and maximum attention during data collection. Following familiarization, data collection commenced. Data were collected for responsive listening skills, social attractiveness, and academic achievement. Subjects were individually escorted to the testing room where they participated in approximately a four-minute video-taped interaction which involved the

conversational presentation of the memorized story script. Subjects were encouraged to respond verbally. Upon completion of this interaction popularity measures were administered. The final data were taken from students' files. Recent standardized achievement scores and final grades in reading, spelling, and language were obtained.

The dependent measures targeted in this study were the specific responsive listener skills identified in Miller et al. (1983). These listener behaviors included the amount of time subjects spent gazing and smiling, and the number of nods, "yeses," "uh-huhs, "ohs," and "okays" emitted by subjects. Five independent observers were first trained according to a standardized format, and then permitted to coded the video-tapes for these specific dependent measures. As a measure of reliability, the experimenter also coded 30 percent of the tapes, chosen at random. Inter-rater reliabilities ranged from .69 to .98 ($p<.001$). Other analyses then investigated relationships between listening skills and social attractiveness, academic achievement, age, sex, and race of subjects. The results of these analyses, as well as a final discussion of these results, make up a

large portion of this paper and will be presented in later chapters.

The next chapter, Chapter II, provides a more in depth review of the literature which is the basis for this research. Chapter III details the methodology used to collect data. Chapter IV and Chapter V provide the results of the data analysis as well as a discussion. Finally, Chapter VI provides a brief summary of this research project.

CHAPTER II

LITERATURE REVIEW

Responsive behaviors are social behaviors which help acknowledge that one is listening, attentive, interested in and understanding of the concerns of another. Responsive behaviors may include verbal responses such as "I see," "ok," "uh-huh," and "oh" (Miller, Lechner, & Ruggs, 1985; Lechner, 1986; Hess & Johnston, 1988). Typical nonverbal responses include body posture, pointing, various facial expressions, gazing, smiling, touching, and nodding (Knapp, 1978).

All of these cues are known as backchannel responses (Duncan, 1975; Duncan & Fiske, 1977), as compared with "front channel" cues, i.e., the spoken message. These backchannel responses serve as conversation facilitators and are generally emitted without apparent effort. These backchannel responses, as will be seen, tend to convey mutual interest, help relay meaning, and in general serve to maintain communication (Miller, Berg, & Archer,

1983; Miller et al. 1985; Purvis, Dabbs, & Hooper, 1984).

Some Functions of Backchannel Responses for Adults

Although it might seem that the role of the listener does not vary much from conversation to conversation, there are in fact tremendous individual differences in how attentive and responsive adults are as listeners. These individual differences have been shown to relate to popularity.

Miller et al. (1983) demonstrated this point in a study of sorority women from a large Southwestern university. Their study introduced as a measure of responsiveness the "Opener Scale," a self-report questionnaire designed to assess quickly the ability one has to "open-up" or obtain intimate information from another. On the basis of this scale, subjects were first classified as high or low "openers." High openers were individuals who used communicative cues which facilitated disclosure; these cues include the backchannel behaviors mentioned earlier. High openers tended to use more backchannel behaviors than did low

openers. A popularity questionnaire was subsequently distributed to members of the sorority. The results indicated that, indeed, more responsive women (high openers) were rated as being better liked, easier to disclose to, having more intimate friendships, and being generally more popular than women using fewer responsive cues.

Purvis et al. (1984) also used the Opener Scale in their research on backchannel behaviors. High and low openers were selected to investigate the cues high openers employed that made them successful in promoting conversations and eliciting self-disclosure from others. Same-gender pairs were seated opposite each other at a small table with a box placed between them. This box, having a small slot through which subjects were to view each other, housed a video camera which recorded visual fixations. Small microphones were placed on subjects' lapels to record verbalizations. Through an elaborate coding system, judges rated a number of responsive behaviors.

In general, the results indicated that high opener males used verbal types of backchannel behavior (e.g. "uh huh," "oh,") to stimulate conversations. Women, on the other hand, relied on

nonverbal responsive behaviors such as smiling and gazing. For both genders, judges rated high openers as appearing more comfortable, attentive, and genuinely interested in their partners during conservations. The empirical evidence from Miller et al. and Purvis et al., seemed to indicate that these behavioral skills, which high openers appeared to possess, were large contributors to the high openers' success with social responsiveness.

Backchannel responses are also important in conservation maintenance. More specifically, these cues aid in what researchers call "turn taking" (Duncan, 1972; Scheflen, 1972; Yngre, 1970). Turn taking cues are exchanged between individuals and help to indicate who speaks, as well as who listens and when; and these rules provide for smooth transitions by indicating when there is a change between who listens and who speaks (Jaffe & Feldstein, 1970; Scheflen, 1968). For example, a pause or an interjected "oh?" often prepares individuals for a turn in the conversation. A study by Duncan (1972) indicated that backchannel behaviors are important in the suppression of a change in who is speaking. Duncan (1972) video recorded and coded behaviors of interviews with

subjects. The results indicated that backchannel behaviors were used by subjects to encourage a speaker to continue speaking. In sum, verbal, as well as nonverbal, cues help conversations by signaling when one may or may not interject or relinquish the floor.

Individual differences in backchannel responsiveness are also related to measures of social attraction and liking (Ellsworth & Ludwig, 1972; Hersen & Barlow, 1976; Rosenfeld, 1966). Rosenfeld (1966), for example, prepared subjects by telling them that the objective, during an interaction with another subject, was either to seek or avoid approval. subjects in the approval-seeking condition employed many more backchannel behaviors (e.g., more smiling, gazing, nodding) than did those in the approval-avoidance condition. It appears that subjects associated the frequent use of responsive cues with being approved by another person.

Davis and Perkowitz (1979) also investigated the effects of responsiveness on interpersonal attraction. Subjects were isolated in rooms and told that they were to get acquainted with someone (out of view) in an adjoining room. The process of

getting acquainted involved answering questions from a prepared list. Subjects were told that the "person" in the other room had the option to respond or not. Actually, the subjects were interacting with a set of prerecorded responses. After the interaction, subjects were asked to rate their attraction to the alleged person. The results indicated more attraction when the alleged person responded more often to subjects, more liking was also noted for the alleged persons whose responses were relevant to the remarks made by subjects. In sum, it was shown that attraction was facilitated by responsiveness.

Summary

A number of studies have shown that backchannel responsiveness plays an important role in adult social interaction. Adults' use of backchannel cues, verbal and nonverbal, has been linked with conversation maintenance, mutual interest, attention, attraction, popularity, intimacy of friendships, and the ability to elicit intimate self-disclosure. Only recently, however, has there been interest in the use of responsive listener skills among children. When and how do they

develop? Do they serve the same functions for children as for adults? How do individual differences arise?

Development and Function of Backchannel Responsiveness in Children

Human infants are socially responsive even from birth (Rheingold, 1969; Schaffer, 1977; Stern, 1974), and much of their responsiveness can be categorized as "backchannel." For example, newborns quiet to the sound of human voices and may turn to look at the source of these sounds (Self & Horowitz, 1979); they show a preference for the voices of their mothers, responding (by sucking) to maintain such speech (DeCasper & Carstens, 1981); they also engage in looking behavior (Bateson, 1975; Bruner, 1975; Jaffe, Stern, & Perry, 1973; Snow, 1977).

The developmental issue, then, is not when backchannel behaviors first appear, but how responsive behaviors change in form and function and how the repertoire of responsive behavior is expanded across developmental time. The issues are well-represented in research on the development of smiling. Babies can smile at birth, and even

several months before, but their smiles are reflexive or spontaneous, occurring almost always in deep sleep and resulting from endogenous stimulation (Emde & Koenig, 1969; Gewirtz, 1965). The first alert smile is noted at three weeks of age (Wolff, 1963). The frequency of smiling then increases until the first social smile, which arrives between 8-12 weeks (Sroufe & Waters, 1976). At this level, infants are actively smiling to faces and voices. In other words, the smile undergoes a qualitative change over developmental time.

In a longitudinal analysis of infants' responsiveness, Kaye and Fogel (1980) outlined the development of the mother-infant interchange during face-to-face interaction. The results indicated that at six weeks, the infants clearly used responsive behaviors (e.g., smiling and gazing), but that such responding was elicited only by a great deal of maternal encouragement or stimulation. With six-week-olds, mothers spent the majority of their interaction time using various forms of stimulation in attempts to capture infants' attention. However, by 26 weeks of age, the infants were actively interacting with mothers

in a "dialogue-like" manner. (generally, mothers smile and touch infants while infants respond with a host of preverbal utterances.) That is, the infants become more autonomous by producing responsive cues with little specific encouragement during interactions with mothers.

Concerning infants and preschoolers, very little research has touched upon the kinds of communicative responsiveness that has been called backchannel behavior. Instead, research interest has tended to focus on the acquisition of "front channel" behaviors (e. g., gestures and the spoken language). One study (Tough, 1973) found that adults, using backchannel behaviors, could encourage children to communicate. However, this study did not demonstrate that children actively use backchannel responses in conversations with others.

More recent studies (Miller et al., 1985; Lechner, 1986) have demonstrated backchannel communicative responsiveness in preschool children (aged 3-5 years), and have shown developmental trends in the use of these behaviors. In these studies, children were conversationally presented a story-type script of presumable interest to

children. Subjects readily interacted with the experimenter using a variety of verbal and nonverbal cues, considered to be responsive in the adult literature (Miller et al., 1983; Rosenfeld, 1966). The cues used by children included eye-contact and gaze, smiling, and nodding. Furthermore, older children used more of the responses, both in amount and kind, than did younger children.

Lechner et al. (1986), using the paradigm established in Miller et al. (1985) also looked at the use of backchannel responsive behaviors in relation to preschoolers' popularity as rated by teachers and peers. To establish liking and social acceptance between preschoolers, the students were asked to identify, using photographs, each student in their classroom. Next students were asked to indicate with which "friends" they would most like to play. Mean scores were tabulated to indicate the most liked children. Next comparisons were made to ascertain the relationship between use of backchannel skills and popularity. The results indicated no apparent relationship between use of responsive behaviors and popularity ratings. It was hypothesized that listener skills for preschool

children may not be important variables in popularity. Young children may have different expectations for interactions with peers than with adults (Holmberg, 1980).

A more recent study (Hazen & Black, 1989) investigating more global kinds of communication skills did find a relationship between preschooler's social attraction and conversation maintenance. Citing Miller et al. (1985), popularity was again measured using photographs and a questioning technique. However, in contrast to Miller et al., and Lechner (1986), in this study preschoolers were also asked to indicate with which peers they were least interested in playing. This additional questioning provided information pertaining to dislike and social unattractiveness, which would make popularity measures more salient and more representative of a given child's true social status. The previous studies merely investigated one end of the social spectrum, thus lumping moderately liked and disliked peers together. Because of this "lumping," the robustness of statistical analysis would be lessened.

As indicated, Hazen and Black (1989) did find relationships between communication skills and peer liking. Preschoolers were observed while interacting during play sessions with peers. Observers targeted initiating behaviors, questioning skills, relevant comments (contingent responses), positive/negative statements, and turn taking. Some of these behaviors could be seen as socially responsive and it was discovered that the use of these skills, even for preschoolers, was related to social attractiveness and liking. What appeared to be the most salient finding was that children with the poorest communication skills were also the least liked. Again, this establishes the importance of such skills even at an early age.

While this study was an important step, in that it linked social attraction and liking to use of communication skills for preschoolers, it did not investigate the use of specific listening skills such as back channel behaviors. How important, then, are these backchannel behaviors? Do they serve the same functions for children as for adults? For infants and young children there is little experimental evidence. Some recent anecdotal evidence, however, points to the

importance of responsive cues for parent-infant interaction and for social development.

The importance of responsive behaviors, even for infants, is seen especially in cases where visual responsiveness is absent. Looking at one's social partner is probably the most fundamental of responsive behaviors, as it may be through these channels that we learn many other responsive behaviors. Obviously, disruptions in visual interactions, for whatever cause, can have profound effects.

Avoidance of eye-contact is the most apparent feature of childhood autism (Hutt & Ounsted, 1966). Stern (1977) observed the interactions of autistic children with their mothers. In describing a particular case, Stern noted an infant's aversion to eye-contact with her mother: the mother regularly went through an elaborate ritual in attempts to establish eye-contact, and, invariably, the infant went through a series of avoidance behaviors so as to dodge this "mother chase." These interactions reportedly frustrated mother and terminated in a somewhat hostile manner, as the infant was put to bed.

In a similar vein, some recent comparative research on blind and sighted infants noted striking differences as to how much less responsive blind infants were to various forms of social stimulation (Fraiberg, 1974). Fraiberg noted: "What we miss in the blind baby, apart from the eyes that do not see, is the vocabulary of signs and signals that provides the most elementary and vital sense of discourse long before words have meaning." (p. 217)

As this quotation illustrates, blind children lack the basic capabilities for acquiring certain responsive behaviors. Adults interacting with these infants complained of blunted affect, depressed facial expressions, apparent lack of interest, and "somewhat unfriendly appearances." This lack of responsive cue development puts blind infants at a disadvantage for initial relationship development.

The importance of backchannel behaviors has also been noted in the classroom. A primary goal for school-aged children appears to be gaining teacher approval (Richey & Richey, 1978). A major way for school-aged children to gain teacher approval is by comprehending and responding to the

communications of the teacher. Indeed, teachers seem to prefer children who do more smiling and gazing, and who are more attentive (Knott, 1979; Koch, 1971; Richey & Richey, 1978; Smith, 1979). Clearly the importance of the study of backchannel behaviors is indicated.

Recently, a study of backchannel behavior has been extended into research on elementary aged children. Hess and Johnston (1988) found that the use of specific backchannel listening behaviors such as eye-contact, verbal cues ("uh huh," "okay," "yes"), increased with age. Seven, nine, and eleven year-old subjects were video-recorded while playing a game with an experimenter. The results indicated that the oldest subjects utilized significantly more backchannel behaviors than younger peers. This result supports and extends similar findings established with preschoolers in Miller et. al (1985) and in Lechner (1986); however, use of these skills was not investigated in a relationship to social attractiveness/liking.

In summary, although there is much empirical evidence concerning the importance of backchannel behaviors for adult interaction and relationships, research on the use of these behaviors in children

is just beginning. Evidence cited indicates that infants use a variety of behaviors which could be considered responsive, including backchannel behaviors, and anecdotal evidence concerning exceptional cases of infant development underscores the importance of such cues in early development and in mother-child interaction. Concerning the use of these cues in early elementary populations, even less is known. A few studies (Miller et al., 1985; Lechner, 1986; Hess et al., 1988) have demonstrated that children use backchannel behaviors in human interactions. However, these studies failed to show how usage of these cues might affect interactions among children. Hazen et al. (1989) addressed this issue to some extent by establishing that preschool children with better developed overall communication skills are liked better than peers with poor communication skills. The question remains: Are children who use such responsive listener cues, such as the specific backchannel behaviors, seen as more popular? If so at what age does the use of listening skills begin to relate to social attractiveness? Also, are there differences in use of these cues among children of different races or cultures? These are

just a few of the questions that need to be addressed.

Goals

One goal of the present study is to extend the findings on backchannel conversational responsiveness from the adult literature, and from studies including preschool subjects, to research on early elementary aged children. Specifically, are children who use more responsive listener cues, as rated by adults and peers, seen as more socially attractive? It is predicted that children who use more backchannel responsive cues would be rated as being better liked, both by their teachers and peers. If during early elementary years listener skills do begin to relate to measures of social attractiveness, one would predict that the strength of the association would increase with age. In other words, the relationship between social attractiveness and use of listener skills would be strongest for the older children in the study.

Second, in an effort to replicate and extend findings of previous research (Hess and Johnston,1988) (Miller et. al. (1985), gender and age relationships will be investigated. It is predicted that older elementary school subjects

will use backchannel behaviors with more frequency than younger peers, and that females will use them more than males.

The third goal is to investigate some previously unresearched relationships. First, is an investigation of racial or cultural differences in the use of specific listener skills. Because of an absence of research in this area predictions are made with caution. Second, a look is made at relationships between responsive listening skills and academic achievement. There is ample research linking listening to achievement, but there is no research linking responsive listener behaviors to achievement. It is predicted that there would be a relationship between achievement and responsive listening.

Summary

Responsive behaviors were defined as social behaviors which help acknowledge that one is listening, attentive, interested in, and understanding of the concerns of another. These behaviors may include verbal responses such as "ok," "uh-huh," and "oh" and nonverbal responses such as gazing, smiling, and nodding. All of these

cues are known as backchannel responses, which serve as conversation facilitators, tend to convey mutual interest, help relay meaning, and in general serve to maintain communication (Miller, Berg, & Archer, 1983; Miller et al. 1985; Purvis, Dabbs, & Hooper, 1984).

These behaviors have important functions for adults. These individual differences have been shown to relate to popularity. Males who were seen as responsive listeners used verbal types of backchannel behavior (e.g. "uh huh," "oh,") to stimulate conversations. Women, on the other hand, relied on nonverbal responsive behaviors such as smiling and gazing (Miller et al., 1983). Research seemed to indicate that these behavioral skills were large contributors to success with social responsiveness.

Backchannel responses are also important in conversation maintenance, or aiding in what is called turn taking. Verbal, as well as nonverbal cues, help conversations by signaling when the speaker may or may not relinquish the floor. A number of studies have shown that backchannel responsiveness plays an important role in adult social interaction. Adults' use of backchannel

cues, verbal and nonverbal, has been linked with conversation maintenance, mutual interest, attention, attraction, popularity, intimacy of friendships, and the ability to elicit intimate self-disclosure.

Backchannel responsiveness has also been documented in children. Smiling in infants, as early as birth, has been noted (Emde & Koenig, 1969). However, this behavior has been seen as reflexive and it is not until three weeks of age when the first alert smile emerges (Wolff, 1963). Smiling behavior increases until the first social smile arrives at 8 - 12 weeks of age (Sroufe & Water, 1976).

Studies (Miller, Lechner, & Ruggs, 1985; Lechner, 1986) have demonstrated backchannel communicative responsiveness in preschool children (aged 3-5 years), and have shown developmental trends in the use of these behaviors. Subjects used a variety of verbal cues (yeses, ohs, uh-huhs) and nonverbal cues including eye-contact and gaze, smiling, and nodding. Furthermore, older children used more of the responses, both in amount and kind, than did younger children.

Lechner (1986), using the paradigm established in Miller et al. (1985) also looked at the use of backchannel responsive behaviors in relation to preschoolers' popularity. No apparent relationship between use of responsive behaviors and popularity ratings was identified. It was hypothesized that responsive listening skills for preschool children may not be an important variable for popularity.

Although there is much empirical evidence concerning the importance of backchannel behaviors for adult interaction and relationships, research on the use of these behaviors in children is just beginning. Evidence cited indicates that infants use a variety of behaviors which could be considered responsive, including backchannel behaviors, and anecdotal evidence concerning exceptional cases of infant development underscores the importance of such cues in early development and in mother-child interaction.

Concerning the use of these cues in early elementary populations, even less is known. A few studies (Miller et al., 1985; Lechner, 1986, Hess et al., 1988) have demonstrated that preschoolers use backchannel behaviors in human interactions. However, these studies failed to show how usage of

these cues might affect interactions among children. Hazen et al. (1989) addressed this issue to some extent, establishing that preschool children with better developed overall communication skills, are liked better than peers with poor communication skills; the question remains: Are children who use such responsive listener cues, such as the specific backchannel behaviors, seen as more popular? If so at what age does use of listening skills begin to relate to social attractiveness? Also, are there differences in use of these cues among children of different races or cultures? These are just a few of the questions that need to be addressed. This study attempts to answer these questions and some goals have been identified:

One goal of the present study is to extend the findings on backchannel conversational responsiveness from the adult literature, and from studies including preschool subjects, to research on early elementary aged children. Specifically, are children who use more responsive listener cues, as rated by adults and peers, seen as more popular? A second goal is to investigate the relationship gender and age have with the use of responsive

listening skills. Will older elementary school subjects use backchannel behaviors with more frequency than younger peers? Will females use more nonverbal responsive listening skills than males?

The third goal is to investigate some new issues with respect to responsive listening. The first is an investigation of racial or cultural differences in the use of these specific listener skills. Are there any identifiable responsive listening differences between African American subjects and Caucasians? Second, there is a look at relationships between responsive listening skills and academic achievement. Are there relationships between achievement and responsive listening? These are a few of the issues that are addressed by this research.

CHAPTER III

METHOD

The purpose of this chapter is to detail the methodology and experimental procedures utilized to collect data for answering important questions about the listening skills of children. This chapter begins with a list of important questions and predicted outcomes. Next, there is a description of the instruments that were utilized to measure listening skills and social attractiveness. Discussion of the procedures utilized for data collection includes a description of the testing room, subject population, and of subject orientation and presentation of procedures used to measure responsive listening, social attractiveness, and academic achievement.

The next section in this chapter focuses on the methods of statistical analysis. This includes a description of the specific dependent measures, a discussion of observer training in coding video-tapes, and specific statistical procedures utilized to analyze the data.

These analyses began with an investigation of main effects, which look at relationships between listening skills and social attractiveness. Additional analyses were utilized to establish relationships between achievement and listening, and between achievement and popularity. Finally, the analysis focused on relationships between listening skills and age, gender, and race of subjects. The last portion of this chapter is devoted to a summary.

Research Questions and Predictions

The following questions address the main issues raised in this research:

1. As a group, do socially attractive students use more responsive listener behaviors than socially unattractive subjects on both the teacher reported and peer reported popularity measures?
2. Are there relationships between use of listener skills and academic achievement? Do higher achieving students use more responsive listener behaviors than lower achieving peers?
3. Do older children use more responsive listener behaviors than younger subjects.

4. Are there gender differences with respect to type and function of listener behaviors utilized by males and females?

5. Are there any between group differences, in type and function, in responsive behaviors between Caucasians and African Americans?

From these questions, the following predictions have been made:

1. As a group, socially attractive students were predicted to use more responsive listener behaviors than socially unattractive subjects on both the teacher reported and peer reported measures.

2. A significant relationship was expected between use of listener skills and academic achievement. It may be that higher achieving students were expected to use more responsive listener behaviors than lower achieving peers.

3. It was predicted that older children would use more responsive listener behaviors than younger subjects.

4. With respect to gender differences, girls were expected to use more nonverbal responsive listener behaviors, while boys would use more verbal listener cues.

5. No racial differences were predicted with respect to use of responsive behaviors between groups.

Instruments

For present purposes it was necessary to provide detailed descriptions of two instruments for collecting data. The first, a story-type script, was utilized as a mechanism for encouraging interaction between experimenter and subject. The purpose of the script was to elicit listening skills from children during a video-taped interaction with an adult. The second instrument considered two types of social attractiveness or popularity. The first measured social attractiveness between peers; the second measured social attractiveness in children as rated by a teacher.

Script

The script, developed to elicit listening skills, has been documented as a research tool in two prior studies. Miller et al. (1985) initially developed this script as a mechanism for encouraging interaction between adults and preschoolers. This technique was merely the verbal

presentation of a memorized story-type script. Every attempt was made on the part of the experimenter to approximate a natural conversation while reciting the script to subjects. The original script included two topics of presumed interest to children. The first was childhood experiences such as finger painting and toys. The second topic involved the film E.T., which was a popular film among children at that time.

This conversational technique was also used successfully by Lechner (1986). The script, however, was modified slightly with topic changes. At the time of data collection for the Lechner et al. study many children had become unfamiliar with E.T., so the topic E.T. was replaced by the story "Rudolph the Red-Nosed Reindeer." This change worked well as Lechner (1986) were able to successfully replicate many of the findings from Miller et al. (1983). The replication data also provides some evidence for reliability. This instrument has been demonstrated to consistently elicit responsive listening skills across studies. These listening skills include gazing, smiling, nodding and backchannel verbal responses such as, "oh," "uh-huh" and "okay."

This script was updated again for the present study. Revisions were made with a topic change to keep pace with the current interests of school-aged children. After consulting a fifth grade student, who did not attend the schools targeted for the study, the previous topic "ET" was replaced with "Batman." This script was rewritten and then presented to the consulting student a second time for further suggestions. Minor language adjustments were made to make the script more appropriate to the language needs of elementary-aged subjects. The script (Appendix A) began, "Today I'm interested in how children and adults talk with each other...." Next, two topics of presumed interest to children were discussed: childhood experiences and the movie "Batman." Virtually every student who participated in the study was familiar with "Batman" and seemed to enjoy the discussion.

Social Attractiveness Measures

Two measures of popularity were developed for this study, both of which were originally documented in Lechner et al. (1986). As was done

for the Script, some modifications were made in both popularity measures.

Peer Ratings

The first measure of popularity involved peer ratings. As in Lechner et al. the class picture of all students, within a given class, was presented to each child. After being presented with his/her class picture, subjects were then encouraged to respond to a series of questions. In Lechner's (1986) research, subjects were merely asked to identify their most liked peers. However, in the present study, these questions were altered. Based on recent research (Hazen et al., 1989), it appeared that more polarity of subjects feelings could be obtained when students were also asked to identify least liked peers. This questioning was included in the present study.

In the updated series of questions, three critical questions were embedded, the answers to which helped determine peer attractiveness. These embedded questions, taken from Hazen et al., (1989) include: "Who do you like to play with the most?" "Is there someone here you don't like to play with sometimes?" "Who is it that you don't like to play

with the most?" (p. 869). Questioning was concluded when either three liked and disliked peers had been identified, or when students indicated that they had finished. Filler questions, intended to obscure the goal of the line of questioning included: "How many teachers do you have?" "What fun things do you get to do at school?" "What kind of work do you like to do?" "What happens at recess?" Every attempt was made to develop lines of inquiry which did not touch upon the personal attributes of the children.

These popularity votes were then recorded for future analysis. Subjects each earned popularity scores based on the sum of the votes given by their peers. Positive votes added to their overall score while negative votes subtracted from their score. Data provided by subjects concerning peer attractiveness were placed on a Data Collection Sheet that also recorded the individual student's identification number, birth date, age, grade, teacher, gender, and race (see Appendix B).

Teacher Ratings

The second attractiveness measure involved teacher ratings. Teachers were asked to rate each

pupil in terms of how much they enjoyed interacting with each individual student. Enjoyable students were described as those whom teachers report liking and with whom they feel they have had successful social interactions. This might be a student that a teacher would like to sit beside at lunch-time. Socially attractive students were defined as those who are well-liked by, and are seen as having successful social interactions with, teachers. It was hoped that this description encouraged teachers to use only their personal choice in making attractiveness decisions. Further, it was hoped that this definition would encourage teachers to avoid basing their popularity decisions on their own perceptions of how individual students are liked by each other. This explanation was providing in writing to teachers on the popularity questionnaire which they were asked to complete for their students (Appendix C).

Only full-time teachers who had been with their class since the beginning of the school year participated in the study. Since this study was completed at the end of the school year, there was some assurance of familiarity with students. The categories of popularity comprised a 7-point,

Likert-type scale, with a "1" indicating very unenjoyable, a "4" indicating average, and a "7" indicating very enjoyable, (generally likeable, with whom teachers have successful social interactions). The teacher's task was to fill out the anonymous survey rating each child in one of the 7 Likert categories.

Procedures

This section provides an explanation of the specific procedures utilized to collect data. This included a description of the subjects, the experimenters, the testing room, and subject familiarization with both the testing room and the experimenter, as well as the actual testing for responsive listening skills, social attractiveness, and academic achievement.

Subject Selection

The subjects in the present study were 101 elementary school students from two racial backgrounds. Subjects were approximately evenly divided by race, 47 were African American and 54 were Caucasian. Subjects were also approximately evenly divided by grade. Students who participated

in the study came from 12 separate classrooms, two from each grade level. Thirty-three subjects were first grade students (6 years of age), 31 were third grade students (8 years), and 37 were fifth graders (10 years). The age range of subjects was from 80 months to 140 months. Similarly, 44 subjects were male and and 56 were female .

All students came from two suburban schools that are racially integrated, consisting of families primarily with middle to lower-middle socio-economic status. Jefferson School provided 49 percent and Sunnyside School provided 51 percent of the subjects for the present study. Only those students whose parents provided written permission were allowed to participate.

Preparation for Testing

Before actual testing of subjects, experimenters were selected, a testing room was organized, and subjects were familiarized. The experimenter had two graduate student assistants who also served as experimenters during data collection only. Both assistants were Masters-level School Psychology Interns. This research

project was a required part of their Internship program.

A room was reserved at each school for testing purposes. The rooms were small classrooms typically utilized by specialty teachers (gifted, speech and language, learning disability). A portable video cassette recorder and a portable color camera were placed behind a table stacked with teachers' books, papers, etc. The bulk of the camera was obscured from the view of students. The camera lens, however, peered over the top of the table and was visible to students. In front of the camera were a round table and two chairs, sized appropriately for elementary aged children. The child's chair faced the camera. The experimenter's chair was placed to the side and to the right of the child. This arrangement allowed the experimenter to make direct eye-contact with the child, while not obscuring the camera's view of the child's face.

Subjects were first familiarized with the experimenter. This was important to assure that the children were not anxious during data collection. It was felt that nervous students would have been less likely to respond naturally.

Some degree of familiarity was assured in advance of the study, as the experimenters were staff members at the schools.

To provide additional familiarity, the experimenter, who was to be interacting with students during videotaping, met with students on three occasions before data collection. During class time, experimenters first introduced and discussed the study following a standard format (see Appendix D). During this time students were informed that their class was "specially chosen for a study." They were then told, "this is a study about how children and adults talk to each other and what they have to say to each other." Next subjects were informed about being video-taped and told the approximate amount of time their participation would take. Finally, students were informed that their participation was voluntary, they were given permission slips (Appendix E), and finally students' questions were answered.

To ensure maximum attention during data collection, subjects were familiarized with the testing room while they were being familiarized with the experimenter. One week before the study began, the experimenter individually escorted

students to the testing room on two separate occasions. On the first visit subjects were given opportunity to investigate the video-equipment.

On the second visit children were escorted to the testing room where their class photograph, taken earlier in the year, had been posted. At this time the individual students were asked to identify each of their peers in the picture. This helped to assure familiarity with peers. The data collected from subjects, who could not successfully identify all of their classmates, was not included in the statistical analysis. At this time students were assigned a number so that their responses could be kept confidential.

Data Collection

Various types of data were collected for later analysis. Listening skills were measured, popularity measures were taken, and achievement scores were gleaned from student records. The procedures for acquiring this information are outlined below.

Testing for Responsiveness

After the children became familiar with the experimenter and testing room, those whose parents consented were again individually escorted to the testing area. Here approximately a four-minute interaction with the experimenter was video-recorded for later analysis. The experimenter presented a memorized story-type script (Appendix A). This script, based on Miller et al. 's (1983) paradigm, was presented conversationally. Every attempt was made to approximate conversation and children were directly encouraged to respond in any way they desired, "... and any time you feel like saying something, it's ok. You can."

Testing for Social Attractiveness

The next step was to collect data using the two measures of attractiveness. The first popularity measure was taken immediately after the four-minute video taped interaction. The peer popularity questions were asked and subjects were then escorted back to the classroom. After all subjects within a given classroom had worked individually with the experimenter, the teachers were provided with their popularity questionnaire (Appendix C).

Both of these measures have been described in detail above.

Recording Achievement

Academic achievement data were recorded from subject's California Achievement Test scores in reading, spelling, and language, as well as their latest grade reports in these same subjects. Only these subject areas were used because they are common to all grades. First grade curriculum does not provide for formal instruction, nor grading, for subjects such as science and social studies. Achievement data were collected only after all other data had been collected and completely coded. This procedure helped to avoid any potential experimenter biases.

Data Preparation and Analyses

This section begins with a description of the specific dependent measures that were collected and how they were prepared for analysis. Next there is a description of the training procedures for independent coders and an explanation of how they coded the video-tapes. There is also a statement of inter-rater reliability between the coders and experimenter. This section concludes with an in-

depth discussion about how the data were analyzed statistically.

Behavioral Measures

Three types of measures served as dependent variables in this study. These were the same variables as identified in Miller et al. (1983). The first two measures were timings. These included amount of time subjects engaged in smiling and gazing directed toward the experimenter. Both Smile and Gaze were tabulated as separate dependent measures. Total interaction time, while not a dependent variable was also measured. Total interaction time was measured to provide rate-per-minute conversions for each of the three dependent variables. Converting raw data into rates per-minute helped control for individual subject differences. These conversions also make direct comparisons between categories of responsive behavior possible. The average total interaction time in this study was four minutes and twenty-two seconds.

The third dependent measure was a comprehensive score. Coders counted and summed the discrete responsive behaviors used by subjects across all

categories of responsive behavior. This included the total "yeses," "okays," "ohs," "uh-huhs," and nods that individual subjects engaged in during the interaction. Because the total duration of each subject's interaction with the experimenter varied from child to child, the "Total" responsive behavior variable was also converted into a rate per minute.

Independent Observations

After all video-taped data had been collected, the experimenter individually trained five independent observers for coding the experimenter-student interactions. These independent observers were different from the two graduate assistant experimenters, but all possessed college degrees, and all but one possessed a graduate degree. Hence subjects, with some degree of familiarity with experimental procedures, were readily made to understand the importance of consistency and standard procedures when recording data.

Next, coders were told that they were measuring responsive listening skills. They were given descriptions of the specific listener behaviors verbally and then shown a blank data collection sheet (see Appendix D). Observers were then

instructed to count specific backchannel behaviors by placing a mark on the line after observing an occurrence of the behavior when it occurred during the video-taped interaction. Coders were instructed that in order to score a behavior, it needed to be emitted naturally by subjects. Behaviors which were directly elicited by experimenter's questions were not counted.

After initial explanations, the experimenter and coder then observed a sample interaction. This sample interaction was one that was not used for data collection. During the sample viewing the experimenter pointed out instances when behaviors were being emitted and demonstrated how to fill out the data collection sheet. The session concluded when the coder felt comfortable enough with the procedure to work independently in his/her home.

Coding Procedures

Using the VCR in their homes, Coders measured the listener behaviors described above. They counted the number of specific backchannel behaviors: nods, "yeses," okays," "ohs," and "uh-huhs" that subjects emitted during the video-taped interaction. At the end of interaction coders were

asked to sum the total number of such behaviors and put the sum in the space provided. This sum then became the raw data for the "Total" dependent measure.

Coders also viewed the tapes and measured for the two other dependent measures, "Smile" and "Gaze." Coders were provided with Cronus digital stopwatches. They were asked to time the durations of smiling and gazing in which subjects engaged and recorded the time on the blank data collection sheet provided.

For purposes of establishing reliability, the experimenter also coded 30% of the interactions, chosen at random, from those coded by each of the five independent observers. The experimenter counted specific backchannel behaviors, measured duration of smiling and gazing, and also measured total interaction time. These data were collected on a data collection sheet separate from the independent observers.

Pearson product-moment correlation coefficients were calculated in an effort to establish inter-rater reliabilities. Correlational analyses were conducted between each of the dependent measures and each of the discrete

responsive behavior categories as measured by the five independent coders and the experimenter. Highly significant Pearson product-moment correlation coefficients ranged from .69 to .98 ($p<.001$).

Statistical Analysis

This section outlines the specific analyses conducted on the data and the pre-analysis predictions. The first set of analyses and predictions is for the main effects investigating the relationship between listening skills and popularity. The next set of analyses looks to establish relationships between listening skills and academic achievement. Following this is an attempt to link academic achievement with peer and teacher popularity. Finally, the analyses investigate relationships between age, gender, and race with respect to use of listening skills.

Main Effects

Pearson product-moment correlations were calculated between each of the three dependent variables defined above (gaze, smile, and total responsive behaviors) and each of the two social attractiveness measures. It was predicted that there would be a significant correlation between

use of responsive listener behaviors and attractiveness ratings by teachers and peers.

In an effort to further analyze the relationship between use of responsive listener skills and attractiveness ratings, additional analyses were completed. It was expected that socially attractive children, as a group, use more responsive listening behaviors. Therefore, subjects were reclassified as holding either high or low attractiveness; these divisions were based upon median splits of attractiveness scores for each of the two attractiveness measures. For teacher and peer ratings, subjects with a given attractiveness score above or below the median cut off were reclassified into either high or low attractiveness groups. These new groupings, with the variables gender and race, were then used as factors, in a single multivariate analysis of variance (MANOVA), each with the three dependent measures, Smile, Gaze, and Total. It was predicted that there would be a significant interaction between popularity and use of these responsive listener skills. Univariate analyses were then completed to help explain the interaction. The univariate analyses helped

determine which responsive listener behaviors varied significantly with which levels of popularity.

In order to establish whether there were mean differences between students with high and low popular scores, and their respective use of the dependent variables, a *t*-statistic was used. Based on median splits, subjects were classified as either holding high or low teacher popularity status. Next, these two groups were compared by their mean usage of the given listener behavior. It was predicted that the students rated as more popular would use these responsive listening skills with significantly more frequency than their less popular counterparts.

The analysis for other significant interactions which resulted from this MANOVA were handled in a fashion similar to that described above. First univariate tests were conducted to help determine the nature of the interaction. For further clarification, post-hoc procedures were administered as needed.

Achievement and Listening Skills

It was also predicted that there would be a positive relationship between the use of responsive listening skills and academic achievement. Academic achievement was measured in terms of school grades and in terms of standardized California Achievement Test (CAT) scores. Students grades were obtained from their final report card. These grades were then coded as numbers on a scale ranging from "5" to "1", with an A earning a score of "5" and an F earning a score of "1." Standardized achievement scores were taken from the most recent CAT scores that were provided in the student file.

Pearson product-moment correlations were calculated between students academic achievement scores, grades in school, and each of the dependent measures, Smile, Gaze and Total. It was predicted that there would be significant correlations between academic achievement and use of responsive listening skills.

In order to further investigate relationships identified by the correlational analyses, subjects were reclassified by median splits into high and low achieving groups. Median splits were

established for students based on both CAT scores and school grades in language. These achievement groupings were used as factors with the dependent measures Smile, Gaze, and Total responsive listening variables in six one-way analyses of variance for each academic subject.

In order to establish whether there were mean standard score differences between academic achievement and students' use of listening skills, a *t*-statistic was used. Based on median splits, subjects were classified as holding either high or low listening status. Next, these two groups were compared by their mean CAT scores in reading, language, and spelling. It was predicted that students who use more of the responsive listening skills would earn higher standard scores on the CAT than students who relied less on listening skills.

To investigate whether these differences also existed for students' grades, the same analysis that was used for standard scores was completed. Again, it was predicted that students who use more listening skills would earn higher grades.

Additional Analyses

Additional findings were gleaned from the data that were not necessarily directly related to the research questions suggested by this study. Our analysis also investigated relationships between popularity and academic achievement, age, and gender. Also relationships between academic achievement and race were explored.

Achievement and Popularity Because it was predicted that there was relationship between listening skills and school achievement, and because it was also predicted that a relationship existed between listening skills and popularity, it was also suspected that there might be a relationship between school achievement and student popularity. This next section attempts to investigate such relationships.

Pearson product-moment correlations were calculated between students' academic achievement scores, grades in school, and each of the two social attractiveness measures. It was predicted that there would be significant correlations between academic achievement and attractiveness ratings by teachers and peers. An analysis of

variance was then conducted to further investigate these relationships.

In an attempt to complete an ANOVA, subjects were reclassified by median splits into high and low achieving groups. Median splits were established for students scores on both academic achievement tests (CAT scores) and school grades. These achievement groupings were then used as factors with the peer and teacher popularity measures in four analyses of variance for each academic subject.

Relationships Between Social Attractiveness and Age and Gender This analysis investigates the relationship between popularity and age and gender. It was wondered if students used age and gender as a basis for making popularity choices. Pearson product-moment correlations were first calculated between age and gender of subjects and the two social attractiveness measures.

To further analyze the relationship between age and popularity, subjects were divided into two age groupings based on median splits. These groupings were used as factors, in two separate analyses of variance (ANOVAS), each with the two popularity

measures, to investigate whether there were significant differences between age groups in rated popularity.

To further analyze the relationship between gender and popularity another ANOVA was conducted. This was done to determine whether or not the variation between boys and girls on popularity measures was significant. Post-hoc analyses were conducted to ascertain whether boys or girls were being rated as more popular by both teachers and peers.

Relationships Between Race and Academic Achievement

In an effort to investigate race differences with respect to school achievement, a simple t-test was conducted to see whether there were mean differences between groups. Subjects were divided into two groups by race, African American and Caucasian, and their mean CAT scores were compared for reading, language, and spelling.

Summary

Five important questions about relationships between responsive listening skills and measures of social attractiveness, academic achievement, age,

gender, and race were the focus of this study. To answer these questions, two important instruments were developed which were utilized to measure listening skills and social attractiveness. A special story-type script, developed by Miller et al. (1983) was updated and verbally presented to students in an effort to approximate conversation. This script has been shown to reliably elicit responsive listener behaviors in children (Miller et al., 1983; Lechner et al. 1986).

Popularity questionnaires, utilized by teachers and peers, were also updated from previous research (Lechner et al., 1986). Peers were presented their class picture and asked a series of questions following research suggestions from Hazen, et al. (1989). The teacher popularity measure involved a brief questionnaire in which teachers were asked to rate students on how much they enjoyed interacting with individual students.

The subjects in this study attended two schools from a lower socio-economic suburb of Chicago. There were 101 subjects, one-third each from first grade, third grade, and fifth grade respectively. Subjects were also approximately evenly divided by race and gender.

A special room was set up which provided a standardized testing environment where videotaping could take place. In the room were a table and chairs, arranged so that the experimenter and subject faced each other, and a teacher's desk piled with books. Behind the desk were the camera and video-equipment. The only observable part of the equipment was the camera lens which peered over the books and faced the student.

Subjects were first familiarized with the experimenters and the testing room to assure comfort and maximum attention during data collection. The experimenter had two graduate student assistants who served as experimenters during data collection. Experimenters visited the classrooms of their subjects and explained the study to students, utilizing a standard format. Subjects were also individually escorted to the testing room to familiarize them with the video equipment and to show students their class picture to assure that all subjects were familiar with classmates.

Following familiarization, data collection for responsive listening skills, social attractiveness, and academic achievement began. Subjects were

individually escorted to the testing room and participated in an approximately four-minute video-taped interaction which involved the conversational presentation of the memorized story script. Subjects were encouraged to respond verbally, "and any time you wish to stop and say something you may..."

Upon completion of this interaction, popularity measures were administered. Subjects were shown their class photograph and asked a series of questions which provided information concerning peer popularity. Teachers were asked to anonymously rate students on how much the teachers themselves liked each individual student. The final data collected were taken from students' files where recent standardized achievement scores and final grades in reading, spelling, and language were obtained.

The dependent measures targeted in this study were the specific responsive listener skills identified in Miller et al. (1983). These listener behaviors included the amount of time subjects spent gazing and smiling, and the number of nods, "yeses," "uh-huhs, "ohs," and "okays" emitted by subjects.

Five independent observers were trained according to a standardized format before they coded the video-tapes for these specific dependent measures. As a measure of reliability, the experimenter also coded 30 percent of the tapes, chosen at random. Inter-rater reliabilities ranged from .69 to .98 ($p<.001$). Other analyses then investigated relationships between listening skills and social attractiveness, academic achievement, age, gender, and race of subjects.

CHAPTER IV

RESULTS

The purpose of this chapter is to detail the analyses and results based on the research questions postulated by this study. This begins with a list of research questions followed by evidence supporting reliability and validity of measures. Next are analyses linking use of responsive listening skills to social attractiveness, gender, race, and academic achievement. Following this is an attempt to investigate the relationship between age and use of listening skills. Finally, there is an attempt to link peer and teacher popularity with academic achievement, age, and gender.

Research Questions and Predictions

The following questions address the main issues raised in this research:

1. As a group, do socially attractive students use more responsive listener behaviors than socially unattractive subjects on both the teacher reported and peer reported popularity measures?
2. Are there relationships between use of listener skills and academic achievement? Do higher

achieving students use more responsive listener behaviors than lower achieving peers?

3. Do older children use more responsive listener behaviors than younger subjects?

4. Are there gender differences with respect to type and function of listener behaviors utilized by males and females?

5. Are there any between group differences, in type and function, of responsive behaviors between Caucasians and African Americans?

From these questions, the following predictions have been made:

1. As a group, socially attractive students were predicted to use more responsive listener behaviors than socially unattractive subjects on both the teacher reported and peer reported measures.

2. A significant positive relationship was expected between use of listener skills and academic achievement. It may be that higher achieving students were expected to use more responsive listener behaviors than lower achieving peers.

3. It was predicted that older children would use more responsive listener behaviors than younger subjects.

4. With respect to gender differences, girls were expected to use more nonverbal responsive listener behaviors, and boys were expected to use more verbal listener cues.

5. No racial differences were predicted with respect to use of responsive behaviors between groups.

These research questions will be addressed through a general discussion of results. The results which follow the next section, provides evidences for reliability and validity.

Reliability and Validity Data

For purposes of establishing reliability, the experimenter coded 30% of the interactions, chosen at random, that were coded by each of the five independent observers. Pearson product-moment correlating coefficients were calculated in an effort to establish inter-rater reliabilities. Correlational analyses were conducted between each of the discrete responsive behavior categories as measured by the five independent coders and the experimenter. Pearson product-moment correlation coefficients ranged from .69 to .98 (see table 1).

This would seem to indicate that coders were reliably measuring responsive listening skills.

Table 1

Intercorrelations of the Measures

Between Independent Coders

Coders' Data	Experimenter's Data						
	yes	okay	uhuh	nod	other	smile	gaze
yes	.97*						
okay		.69*					
uhuh			.96*				
nod				.92*			
other					93*		
smile						.97*	
gaze							.97*

* $p<.001$.

In an effort to support reliability findings, mean levels of Smile, Gaze, and Total responsive behaviors were compared between data from each independent coder and the data collected by the experimenter. The results indicated no significant differences between the experimenter collected data and that collected by the independent observers (see table 2).

Table 2

Differences Between Experimenter Collected Data and Independent Observer Data

Coder	Dependent Measure	T-Statistic	Level of Sig.
1	Smile	-2.61	$p>.05$
	Gaze	-0.07	$p>.05$
	Total	-1.57	$p>.05$
2	Smile	-0.14	$p>.05$
	Gaze	0.36	$p>.05$
	Total	0.26	$p>.05$
3	Smile	0.04	$p>.05$
	Gaze	2.10	$p>.05$
	Total	2.50	$p>.05$
4	Smile	1.69	$p>.05$
	Gaze	0.63	$p>.05$
	Total	1.21	$p>.05$
5	Smile	0.60	$p>.05$
	Gaze	2.23	$p>.05$
	Total	-1.00	$p>.05$

Taken together the data, supporting high inter-rater reliabilities and the lack of significant mean differences between the experimenter collected data and the data collected by independent observers, seem to indicate adequate reliabilities between coders.

In an effort to establish validity, Pearson product-moment correlating coefficients were calculated between subjects' scores on both the peer and teacher popularity measures. The results indicated a positive significant relationship between peer and teacher popularity with a correlation of .28, $p < .005$.

Similar reliability and validity findings were identified from the previous research in this series of studies. In 1986, Lechner et al. documented significant interrater reliabilities ranging from .74 to .98 ($p<.001$). Also significant mean differences between experimenter and independent observer collected data were not found. Finally, Lechner et al. (1986) provided evidence for validity. The correlation between the peer and teacher popularity measures ($r=.37$, $p<.01$) was similar to the modest, yet significant, correlation presented above. The data on reliability and

validity collected in this study, and from previous research, provide additional support for the technical adequacy of this research paradigm.

Relationships Between Responsive Listening, Gender, Race, and Social Attractiveness

In this section relationships are established between responsive listening (Gaze, Smile, Total) and gender, race, and popularity. Initially, correlations between these variables are presented, followed by more in-depth analyses establishing gender, race, and listening relationships with teacher and peer popularity.

Correlational Analyses

Pearson product-moment correlations were calculated between each of the three dependent variables defined above (Gaze, Smile, and Total responsive behaviors) and each of the two social attractiveness measures, as well as race and gender. As predicted, there were positive significant correlations between use of responsive listener behaviors and attractiveness ratings by teachers and peers (see table 3).

Table 3

Correlations Between Frequencies of Backchannel Behaviors and Measures of Popularity

	Behavioral Measures		
	gaze	smile	total
Peer Popularity	-.03	.12	.21*
Teacher Popularity	-.13	.26**	.20*
Race	-.14	.24**	.14
Gender	.21**	.04	.11

* $p<.05$

** $p<.01$

In an effort to further analyze the relationship between use of responsive listener skills and attractiveness ratings, gender, and race, additional analyses were completed. It was expected that socially attractive children, as a group, use more responsive listening behaviors than less socially attractive children. In addition, it was expected that girls use more responsive listening behaviors than do boys. Therefore, subjects grouped according to gender and race were reclassified as holding either high or low attractiveness. These divisions were based upon median splits of attractiveness scores from each of the two attractiveness measures. For teacher and peer ratings, boys and girls with a given attractiveness score above or below the median cut off were classified appropriately into either high or low attractiveness groups. These new groupings were then used as factors in a single multivariate analysis of variance (MANOVA), each with the three dependent measures, Smile, Gaze, and Total responsive listening behaviors (See Table 3).

The first significant interaction indicated by the MANOVA was a two-way interaction between gender and social attractiveness with respect to

the use of listening skills. The second significant result indicated was a significant effect for the Race variable with respect to listening skills. Both of these analyses are outlined below.

Gender by Popularity Interaction

The first significant interaction indicated by the MANOVA was a two-way interaction between gender and social attractiveness with respect to use of listening skills. Table 4 details the results of this interaction. Following Table 4 is a discussion of the post-hoc investigations, with supporting figures which help to explain the interaction.

Table 4

Multivariate Analysis of Variance

Effect: Gender by Peer Popularity by Teacher Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig.of F
Pillais	.1052	3.17	3.0	81.00	.028
Hotellings	.1176	3.17	3.0	81.00	.028
Wilks	.8948	3.17	3.0	81.00	.028
Roys	.1052				

Univariate F-tests with (1,83) DF

	Sum of Squares		Mean Square			
Variable	Hypoth.	Error	Hypoth.	Error	F	Sig.
Gaze	.2123	3.95	.2123	.0476	4.46	.038
Smile	.1812	2.75	.1812	.0332	5.46	.022
Total	.0001	0.07	.0001	.0009	0.12	.731

The results indicated a significant interaction between popularity of subjects and gender with respect to use of responsive listening skills ($F(1,99)=3.17$, $p<.05$). Univariate F-tests were then conducted to see which dependent measures were influencing this interaction. The results indicated significant differences for the Smile ($F(1,99)=5.46$, $p<.05$) and Gaze variables ($F(1,99)=4.46$, $p<.05$), but not for the Total responsive behavior variable ($F(1,99)=0.75$, $p>.05$). Next, a closer look at teacher and peer popularity was conducted with respect to both Gaze and Smile.

Teacher Popularity and Gaze

In order to interpret the significant gender by teacher popularity interaction, mean comparisons were made for gazing behavior, between teacher-rated high and low popularity, for both boys and girls. These means were then plotted in Figure 1.

Figure 1

Gaze in Relation to Gender

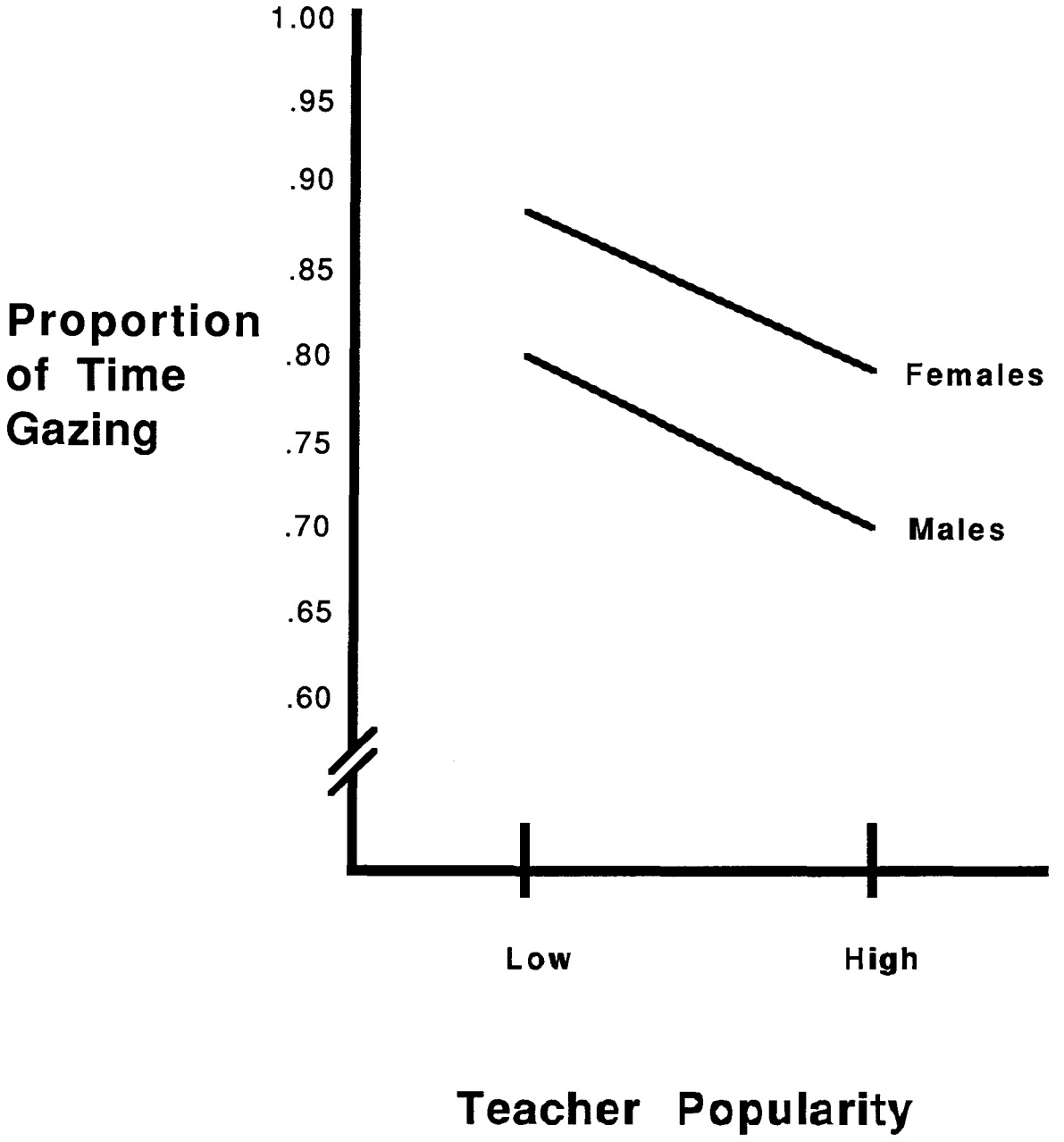


Figure 1 indicates that regardless of teacher-rated popularity, females tend to engage in more gazing than males. Mean Gaze scores of males and females were then directly compared. As predicted, females do engage in significantly more gazing than males (F=4.46, p<.05). A mean Gaze comparison was also conducted between high and low teacher-rated popular students. Contrary to predictions, it appears that students of both genders who have low popularity status with teachers engage in significantly more Gaze than do their more popular counter-parts (t=1.95, p<.05).

Teacher Popularity and Smile

In order to interpret the significant gender by teacher popularity interaction, mean comparisons were also made for smiling behavior, between teacher-rated high and low popularity, for both boys and girls. These means were then plotted in Figure 2.

Figure 2

Smile in Relation to Teacher Popularity

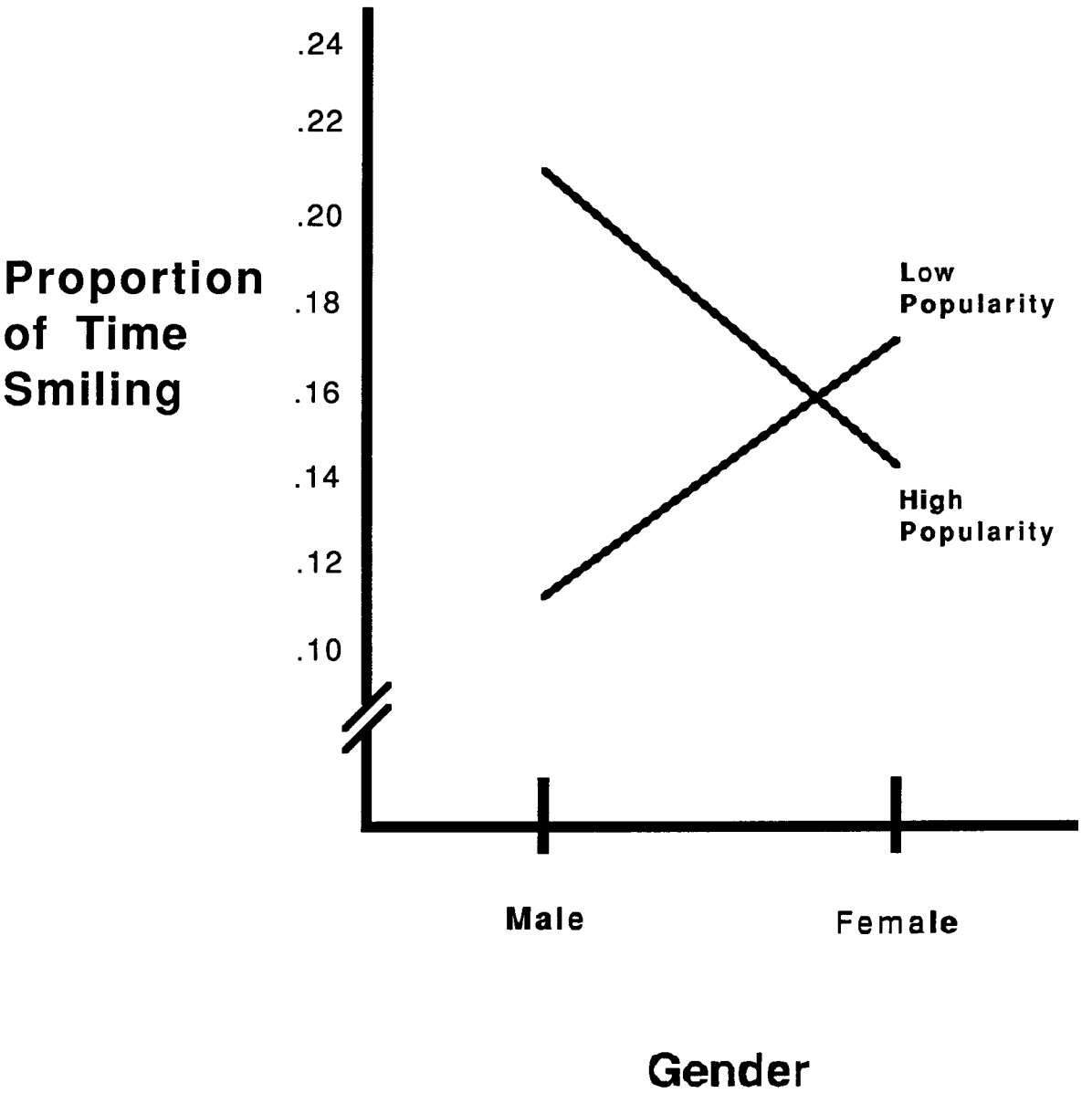


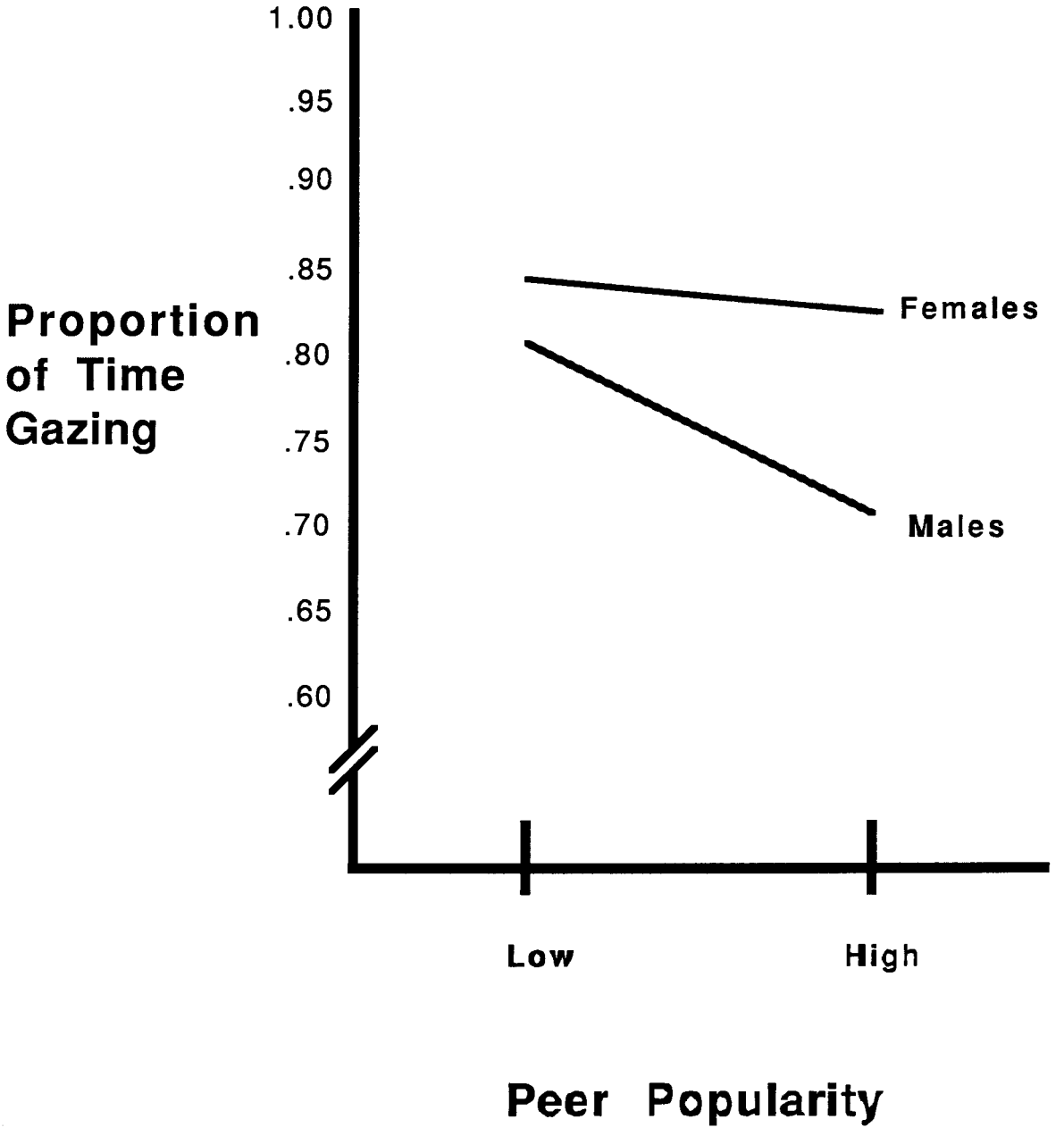
Figure 2 demonstrates that for Smile, there appears to be a significant interaction between gender and teacher rated popularity. Consistent with predictions, highly popular boys, as rated by teachers, tend to engage in significantly more Smile than their less popular counterparts ($F=5.46$, $p<.05$). This was not true for girls as significant mean Smile differences were not noted between high and low teacher-rated popular students ($t=0.56$, $p>.05$).

Peer Popularity and Gaze

In order to interpret the significant gender by peer popularity interaction, mean comparisons were made for gazing behavior between peer-rated high and low popularity for boys and girls. These means were then plotted in Figure 3.

Figure 3

Gaze in Relation to Gender



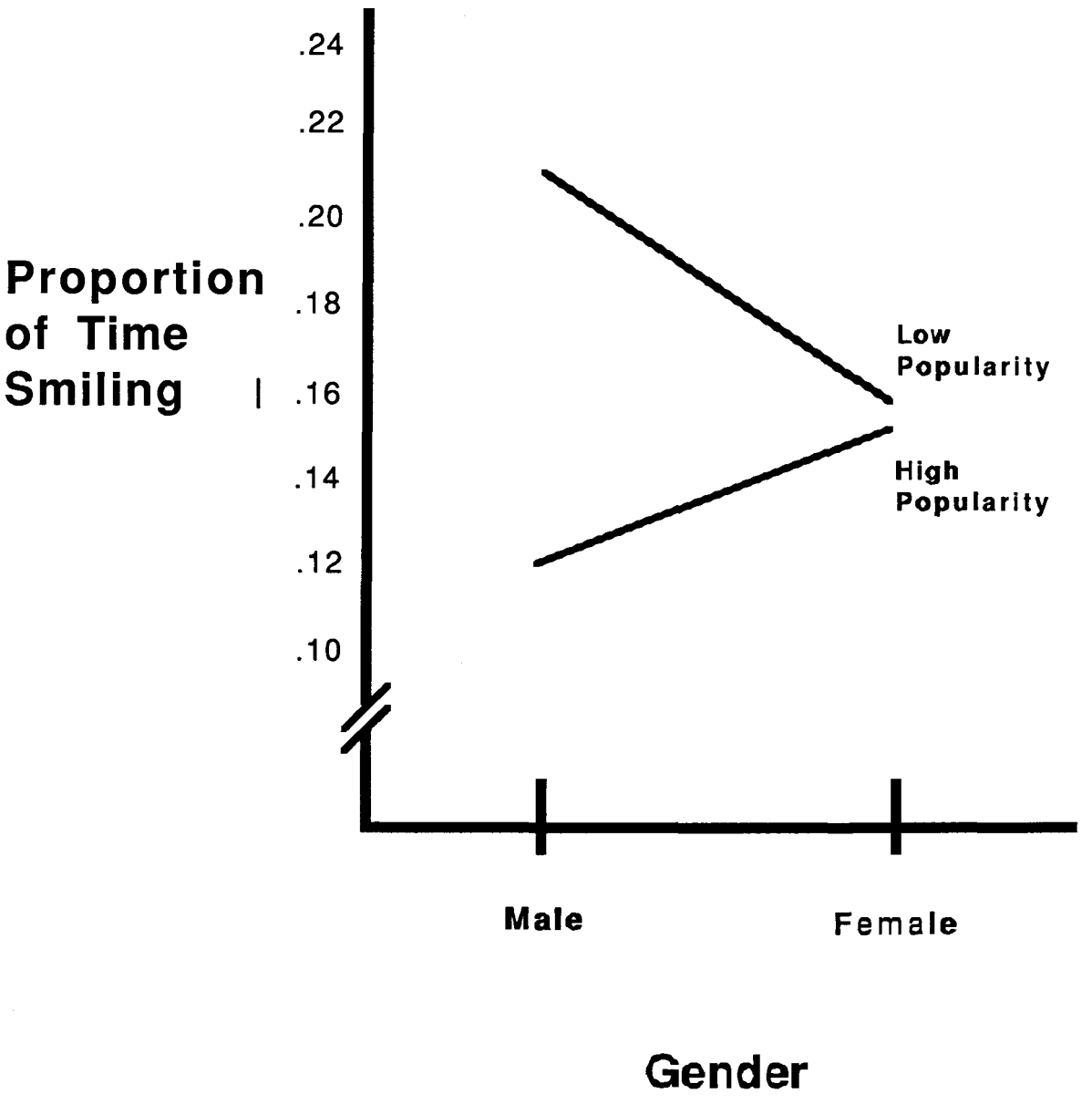
Related to findings for teacher popularity, Figure 3 indicates that regardless of peer-rated popularity, females tend to engage in more gazing than males. Based on this observation, mean Gaze scores of males and females were then directly compared. As predicted, females do engage in more gazing than males ($F=4.46$, $p<.05$). A mean Gaze comparison was also conducted between high and low peer-rated popular students. From an inspection of Figure 3, it appears, as was found with teacher popularity, that boys having low popularity status with peers engage in more Gaze than their more popular counter-parts. However, while this difference approaches significance, it is actually not statistically significant ($t=1.55$, $p>.05$). This same result was noted for girls; there appears to be no relationship between popularity and use of Gaze ($t=0.12$, $p>.05$).

Peer Popularity and Smile

In order to interpret the significant gender by peer popularity interaction, mean comparisons were made for smiling behavior between peer-rated high and low popularity for boys and girls. These means were then plotted in Figure 4.

Figure 4

Smile in Relation to Peer Popularity



Similar to findings noted for teacher-rated popularity, Figure 4 demonstrates that for Smile, there also appears to be a significant interaction between gender and peer-rated popularity. Contrary to predictions, boys with low peer popularity status tend to engage in significantly more Smile than their more popular counterparts (F=5.46, p<.05). This was not true for girls as significant mean Smile differences were not noted between high and low teacher-rated popular students (t=0.13, p>.05).

Gender and Responsive Listening

Results from the above analysis support contentions for gender differences with respect to use of listener skills. In this analysis gender was investigated separately to support findings documented previously. In an effort to analyze the relationship between use of responsive listener skills and gender, an ANOVA was also completed. Subjects were divided into two groups (males, females) which served as two factors with the three dependent measures, Smile, Gaze, and Total. The results indicated a significant relationship between gender and use of Gaze ($F(1,81)$=3.92, p<.05), but no relationship between sex and the

Smile ($F(1,81)=0.48$, $p>.05$), nor for the Total variables ($F(1,81)=0.04$, $p>.05$) (See Table 5).

Table 5

Gender by Listening Analyses of Variance

Gender by Gaze:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	.232	01	.232	3.923	.05
Explained	.232	01	.232	3.932	.05
Residual	4.738	80	.059		
Total	4.970	81	.061		

Gender by Smile:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	.020	01	.020	0.482	.49
Explained	.020	01	.020	0.482	.49
Residual	3.391	80	.042		
Total	3.411	81	.042		

Gender by Total:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	.000	01	.000	0.043	.84
Explained	.000	01	.000	0.043	.84
Residual	.079	80	.001		
Total	.079	81	.001		

Because there was significant variation between gender and Gaze, and because it was predicted that females would demonstrate more responsive listener skills than males, a post-hoc analysis was conducted to assess whether or not there might be gender differences in the use of gazing as a listening skill. The result indicated that indeed females do tend to engage in more gazing than their male counterparts (t=2.07, p<.05).

Race and Responsive Listening

Another significant effect indicated by the MANOVA was with respect to race and use of listening skills. Table 6 details the results of this analysis. A discussion of the post-hoc investigations, which help to explain this finding, follows Table 6.

Table 6

Multivariate Analysis of Variance

Effect: Race

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig of F
Pillais	.0966	2.89	3.0	81.00	.041
Hotellings	.1069	2.89	3.0	81.00	.041
Wilks	.9035	2.89	3.0	81.00	.041
Roys	.0966				

Univariate F-tests with (1,83) DF

	Sum of Squares		Mean Square			
Variable	Hypoth.	Error	Hypoth.	Error	F	Sig
Gaze	.0864	3.95	.0864	.0476	1.81	.181
Smile	.1507	2.75	.1507	.0332	4.54	.036
Total	.00522	0.07	.0052	.0009	5.91	.017

In an effort to analyze the relationship between the use of responsive listener skills and race, as indicated by Table 6, an univariate analyses of variance were again completed. Subjects were classified into separate groups according to race (African American, Caucasian). These race groupings were then used as factors with the three dependent measures Smile, Gaze, and Total. Results indicated significant variation between racial groups with respect to use of Smile ($F(1,83)=4.54$, $p<.05$) and Total ($F(1,83)=5.91$, $p<.05$), but not for the Gaze ($F(1,83)=1.81$, $p>.05$) variable. The results indicated that Caucasian students tended to use significantly more Smile and Total as listening skills than did their African American counterparts.

Relationships Between Age and Responsive Listening Skills

In an effort to determine relationships between age of subjects and use of responsive listening skills, an analysis of variance was conducted. Subjects were reclassified by age, using median splits, and then placed into two separate groups according to age (older versus younger students).

These age groupings were then used as factors, in an ANOVA, with the three dependent measures Smile, Gaze, and Total responsive behaviors. The results indicated no significant relationship between age and Gaze ($F(1,67)=0.11$, $p>.05$), Smile ($F(1,67)=0.07$, $p>.05$), nor the Total responsive behavior variable ($F(1,67)=0.002$, $p>.05$) (see Table 7)

Table 7

Analyses of Variance

Age by Listening Skills

Age by Gaze:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0036	01	0.0036	0.1110	.74
Within Groups	2.1316	66	0.0323		
Total	2.1352	67			

Age by Smile:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0034	01	0.0034	0.0706	.79
Within Groups	3.1571	66	0.0478		
Total	3.1605	67			

Age by Total:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0000	01	0.0000	0.0020	.96
Within Groups	0.0654	66	0.0010		
Total	0.0654	67			

Relationships Between Academic Achievement and Responsive Listening Skills

Now that relationships have been established between use of responsive listening skills and popularity, this section focuses on relationships between use of responsive listening skills and school achievement. This begins with a presentation of relevant correlations, followed by more in-depth analyses linking responsive listening skills to academic achievement in language, reading, and spelling.

Correlational Analyses

Pearson product-moment correlations were calculated between students academic achievement scores, grades in school, and each of the dependent measures, Smile, Gaze, and Total. As predicted, there were significant positive correlations between academic achievement and dependent measures (see table 8).

Table 8

Correlations Between Academic Achievement Behaviors and Dependent Measures

	Academic Measures					
	Reading		Language		Spelling	
	Grade	Score	Grade	Score	Grade	Score
Gaze	.02	.02	.11	.00	.09	.17
Smile	.27**	.26**	.21**	.18*	.07	.19*
Total	.12	.13	.01	.10	.13	.01

* $p<.05$

** $p<.01$

In an effort to understand the relationship between responsive listening and school achievement, additional analyses were conducted. The investigations for each academic subject, language, reading, and spelling are outlined below.

Language and Responsive listening

In order to establish a relationship between language and responsive listening, subjects were reclassified by median splits into high and low achieving groups. Median splits were established for students based on both CAT scores and school grades in language. These achievement groupings were then used as factors with the dependent measures Smile, Gaze, and Total responsive listening variables in six one-way analyses of variance (see Appendix F and Appendix G).

When investigating grades in language, significant differences were noted between high and low achievers for Smile ($F(1,99)=3.69$, $p<.05$), but not for Gaze ($F(1,99)=0.11$, $p>.05$), nor for the Total responsive behavior variable ($F(1,99)=0.002$, $p>.05$). With respect to CAT scores, a nonsignificant trend was identified for Smile ($F(1,96)=2.29$, $p>.05$), but not for Gaze

($F(1,96)=0.27$, $p>.05$), nor for the Total responsive listening variable ($F(1,96)=.005$, $p>.05$). These results indicate that students who tended to engage in more smiling earned higher grades ($t=1.99$, $p<.05$) and scored higher on the standardized language test ($t=2.27$, $p<.05$).

Reading and Responsive listening

In order to establish a relationship between reading and responsive listening, subjects were reclassified by median splits into high and low achieving groups. Median splits were established for students based on both CAT scores and school grades in reading. These achievement groupings were then used as factors with the dependent measures Smile, Gaze, and Total responsive listening variables in six one-way analyses of variance (see Appendix H and Appendix I).

Concerning grade data in reading, an analysis of variance indicated a non-significant trend between grades and the dependent measure, Smile ($F(1,83)=2.79$, $p>.05$). However, not even trends could be established for the Gaze ($F(1,83)=0.02$, $p>.05$) and the Total responsive behavior variables ($F(1,83)=0.86$, $p>.05$).

A non-significant trend was also identified between CAT reading scores and the dependent variable, Smile ($F(1,96)=2.15$ $p>.05$). Again, however, trends could not be observed for the Gaze ($F(1,96)=0.43$, $p>.05$) and Total responsive listening variables ($F(1,96)=.29$, $p>.05$).

Because a non-significant trend was observed for Smile on both grades and CAT scores, post-hoc tests were conducted to see whether there might be any mean differences between high and low achievers with respect to their use of listening skills. The results indicated that students who scored higher on the standardized reading test tended to engage in more smiling ($t=2.18$, $p<.05$).

Spelling and Responsive listening

To establish a relationship between spelling and responsive listening, subjects were reclassified by median splits into high and low achieving groups. Median splits were established for students based on both CAT scores and school grades in spelling. These achievement groupings were then used as factors with the dependent measures Smile, Gaze, and Total responsive

listening variables in six analyses of variance (see Appendix J and Appendix K).

While significant results were obtained between high and low achievers in reading and language with respect to use of smiling, no such results were obtained for achievement in spelling. ANOVA results indicated non significant findings between students grades in spelling and the dependent measures, Smile $F(1,96)=0.0029$, $p>.05$), Gaze ($F(1,96)=1.23$, $p>.05$), and Total ($F(1,96)=0.91$, $p>.05$). Similar non-significant findings were noted for CAT scores in spelling and the dependent measures, Smile ($F(1,65)=0.12$, $p>.05$), Gaze ($F(1,65)=0.31$, $p>.05$), and Total ($F(1,65)=0.10$, $p>.05$).

Further Analyses

Additional findings were gleaned from the data that were not necessarily directly related to the research questions suggested by this study. Results indicated additional relationships between popularity and academic achievement, age, and gender. Also relationships were noted between race and academic achievement.

Relationships Between Social Attractiveness and Academic Achievement

This section investigates the relationship between student popularity and student achievement. Because a relationship has been established between popularity and responsive listening, and a relationship has also been established between responsive listening and academic achievement, it was wondered if there might be relationships between achievement and popularity. This analysis began with a presentation of correlational data. This investigation was followed by a more in-depth study of the relationship popularity has with students' scores in language, reading, and spelling.

Correlational Analyses Pearson product-moment correlations were calculated between students California Achievement Test (CAT) scores and academic grades in school, and each of the two social attractiveness measures. As predicted, there were significant positive correlations between academic achievement and attractiveness ratings by teachers and peers (see table 9).

Table 9

Correlations Between Academic Achievement Behaviors and Measures of Popularity

	Academic Measures					
	Reading		Language		Spelling	
	Grade	Score	Grade	Score	Grade	Score
Peer Popularity	.25*	.25*	.21*	.24**	.16	.15
Teacher Popularity	.36**	.31**	.27**	.30**	.18	.02

* $p<.05$

** $p<.01$

To further investigate the findings from Table 8, additional analyses were conducted. Below is a description of these results presented by academic subject, language, reading, and spelling.

Language in Relation to Popularity In an attempt to complete an ANOVA, subjects were reclassified by median splits into high and low achieving groups. Median splits were established for students scores on both academic achievement tests (CAT scores) and school grades in language. These achievement groupings were then used as factors with the peer and teacher popularity measures in four analyses of variance.

With respect to standardized CAT language scores, significant differences were noted between high and low achievers on both teacher ($F(1,64)=14.03$, $p<.01$) and peer popularity ($F(1,64)=9.13$, $p<.01$)(see Appendix L). For students' grades in language, significant differences were noted between high and low achievers for teacher popularity ($F(1,98)=6.0$, $p<.005$) and a non significant trend was observed for peer popularity measures ($F(1,98)=3.43$, $p>.05$) (see Appendix M). The results indicated that

students who earned higher CAT scores and higher grades in school tend to be rated as more popular by peers and teachers.

Reading in Relation to Popularity In an attempt to complete an ANOVA, subjects were reclassified by median splits into high and low achieving groups. Median splits were established for students' scores on both academic achievement tests (CAT scores) and school grades in reading. These achievement groupings were then used as factors with the peer and teacher popularity measures in four analyses of variance. ANOVA results for reading indicated similar findings as were observed for language.

Significant differences were observed among CAT scores for teacher popularity ($F(1,53)=11.03$, $p<.01$) and a nonsignificant trend was observed for peer popularity ($F(1,53)=2.52$, $p>.05$) (see appendix N). Significant differences were also noted for grades between high and low achievers on teacher popularity measures ($F(1,82)=4.34$, $p<.05$), and a non significant trend was noted on peer popularity measures ($F(1,82)=2.47$ $p>.05$) (See Appendix O). These results indicate that students who scored higher on standardized reading achievement tests

and earned higher reading grades tended to be rated as more popular by peers and teachers.

Spelling in Relation to Popularity In an attempt to complete an ANOVA, subjects were reclassified by median splits into high and low achieving groups. Median splits were established for students scores on both academic achievement tests (CAT scores) and school grades in spelling. These achievement groupings were used as factors with the peer and teacher popularity measures in four analyses of variance.

While significant results were obtained between achievement in reading and language and ratings of popularity, by both peers and teachers, no such results were obtained for achievement in spelling. In an analysis of variance of CAT score data, the results indicated non significant findings for teacher popularity ($F(1,43)=2.35$, $p>.05$), and peer popularity ($F(1,43)=0.28$, $p>.05$)(see appendix P). Students' grades in spelling also resulted in nonsignificant variation for teacher ($F(1,98)=0.02$, $p>.05$) and peer popularity ratings ($F(1,98)=0.24$, $p>.05$)(see Appendix Q). These results indicate

that there are no noted relationships between achievement in spelling and ratings of popularity.

Relationships between Social Attractiveness and Age and Gender

This section investigates the relationship between popularity and age and gender. It was wondered if students used age and gender as a basis for making popularity choices. To begin this investigation, a look was made at correlational findings. Next, more in-depth investigations were conducted between ratings of popularity and the age and gender of subjects.

Correlational Analyses Pearson product-moment correlations were calculated between age and gender of subjects, and the two social attractiveness measures. As predicted, there were significant positive correlations between these variables and attractiveness ratings by teachers and peers (see table 10).

Table 10

Correlations Between Age and Gender Variables and Measures of Popularity

	Behavioral Measures	
	age	Gender
Peer Popularity	.23**	.31**
Teacher Popularity	.05	.22*

* $p<.05$

** $p<.01$

Age and Popularity To further analyze the relationship between age and popularity, subjects were divided into two age groupings based on median splits. These groupings were used as factors in two separate analyses of variance (ANOVAS). Each grouping was studied with the two popularity measures to investigate whether or not there was significant variation among age groups in rated popularity.

There were significant differences among age groups with respect to peer popularity ($F(1,98)=5.34$, $p<.05$), but there was no significant popularity differences between age groups for teacher popularity measures ($F(1,98)=0.525$, $p>.05$)(see Appendix R). When looking at peer relationships, older peers have been rated as holding more peer social attractiveness than their younger counterparts.

Gender and Popularity Significant positive correlations have been established between gender of subjects and popularity. An ANOVA was conducted to determine if the variation between boys and girls on popularity measures was significant. With respect to gender, significant differences were

identified among both peer popularity ($F(1,98)=10.67$, $p<.005$) and teacher popularity scores ($F(1,98)=5.00$, $p<.05$)(see Appendix S). Post-hoc analyses were conducted to ascertain whether boys or girls were being rated as more popular by both teachers and peers. Significant mean differences indicated that girls are rated as being liked better by both peers ($t=3.31$, $p<.01$) and teachers ($t=2.21$, $p<.05$).

Race and Academic Achievement

In an effort to investigate race differences with respect to school achievement, a simple t-test was conducted to see whether or not there were mean differences between groups. Subjects were divided into two groups by race, African American and Caucasian, and their mean CAT scores were compared for reading, language, and spelling. The results indicated significant differences between groups with respect to reading. Caucasian subjects tended to score higher on the standardized achievement test than their African American counterparts ($t=3.44$, $p<.001$). However, there were no significant differences between races with respect

to school achievement in language (t=1.43, p>.05) or spelling (t=0.13, p>.05).

Summary

This chapter opened with a list of hypotheses which was followed by the results that attempted to address these predictions. The results began with findings supporting the reliability and validity of the measures used to collect data. Next came the analyses supporting relationships between use of responsive listening skills and popularity.

Supporting predictions, the data indicated that boys who engage in more smiling were rated higher higher on teacher popularity measures. No significant results were identified for girls. Contrary to predictions, significantly more gazing was done by low teacher popular students of both genders.

Similar results were obtained from peer popularity data. While not significant, there was a trend indicating that boys, rated as having low peer popularity, tended to engage in more gazing. A significant finding, contrary to predictions, was also noted when low peer popular boys were found to engage in more smiling than their more popular

counter-parts. There were no significant results supporting any findings for girls at this level.

Results established relationships between use of listening skills and academic achievement. Analyses indicated a positive relationship between smiling behavior and California Achievement Test (CAT) scores in language and reading. Smiling was also found to relate significantly to grades in language. There appears to be no relationship between use of responsive listening skills and spelling.

When age, gender, and race were variables of concern, there appeared to be no age differences with respect to how children use these listening skills. However, there were some gender differences. It appears, as predicted, that girls engage in more gazing than do boys. Race differences were also identified. It appears that Caucasian subjects engage in significantly more Smile and Total than do their African-American counterparts.

Relationships between popularity and academic achievement have also been noted. Highly popular students, both with teachers and peers, tended to earn higher grades and higher CAT scores in

language. More popular students also earned better reading scores on the CAT.

Finally, in this chapter relationships between popularity ratings and age and gender differences of subjects were reported. It was found that older subjects were better liked by peers than younger students. It was also demonstrated that girls are liked better than boys, as rated both by teachers and peers.

While there was evidence supporting predictions made at the onset of this research, there were also conflicting results. The next chapter will include a discussion on these findings in an attempt to shed light on apparent discrepancies.

CHAPTER V

DISCUSSION

This chapter attempts to bring together findings from this study with other related research in an effort to understand childrens' responsive listening skills in a more global manner. First is a brief discussion of the technical merits of this research followed by an in-depth discussion of developmental findings. Related research sheds light upon developing functions of the listening behaviors of interest in the study relative to age, gender, and achievement. Other than listening skills, there are also important correlates to social attractiveness, such as, academic achievement, gender, and age of subjects. Finally, this chapter discusses the implication for identified race differences in the use of listening skills.

Technical Strengths

Before discussing the findings and implications of this study, it is important to emphasize the technical strengths of this research, the third in a series of studies. The research tool established

in the original study (Miller et al., 1983) was utilized and further developed in subsequent research (Lechner et al., 1986). Throughout this series of three studies, the research paradigm has been successfully utilized with children of mixed socio-economic and racial groups. In all three studies data supporting reliability and validity were consistently high. Reliability and validity data for the present study, and from previous research, can be found in Chapter IV, Results.

Additionally, the measures have been shown to be easy to administer. Little time is needed to get a good sample of listening skills, and the children who participated indicated, by their actions and behaviors, a good deal of interest and attention. Based on the empirical findings and face validity, this research paradigm has been established as a valid and reliable measure for responsive listening skills and social attractiveness.

Five major research questions were addressed in this research. While findings did not support all predictions, there is clear evidence that the listening skills of children in this study are developing in a direction that begins to

approximate skills adults have been documented to possess. The discussion begins with a review of developmental findings.

Developmental Findings

Important to developmental findings is related research which helps to put the present knowledge of responsive listening skills into perspective. This research provides the basis for examining the functioning of listening skills in terms of social attractiveness and the relationships between age, gender and academic achievement and the use of these skills.

Relevant Research

Human infants are socially responsive even from birth, and much of their responsiveness can be categorized as "backchannel." (As indicated in Chapter I, backchannel behaviors are a class of responsive listening cues that indicate listening and attention.) Research indicates that babies can smile at birth, and even several months before, but their smiles are reflexive or spontaneous, occurring almost always in deep sleep and resulting from endogenous stimulation (Emde & Koenig, 1969; Gewirtz, 1965). The first alert smile is noted at

three weeks of age (Wolff, 1963). The frequency of smiling increases until the first social smile, which arrives between 8-12 weeks (Sroufe & Waters, 1976). At this level, infants are actively smiling in response to faces and voices. In other words, the smile undergoes a qualitative change over developmental time.

In a longitudinal analysis of infants' responsiveness, Kaye and Fogel (1980) outlined the development of the mother-infant interchange during face-to-face interaction. The results indicated that at 6 weeks, the infants clearly used responsive behaviors (e.g., smiling and gazing), but that such responding was elicited only by a great deal of maternal encouragement or stimulation. With 6-week-olds, mothers spent the majority of their interaction time using various forms of stimulation in attempts to capture the infants' attention. However, by 26 weeks of age, the infants were actively interacting with mothers in a "dialogue-like" manner. (Generally, mothers smile and touch infants while infants respond with a host of preverbal utterances.) That is, the infants become more autonomous and produce

responsive cues, with little specific encouragement, during interactions with mothers.

Concerning preschoolers, some research has touched upon the kinds of communicative responsiveness that has been called backchannel behavior. A series of studies (Miller et al., 1985; Lechner, 1986) have demonstrated backchannel communicative responsiveness in preschool children (aged 3-5 years), and have shown developmental trends in the use of these behaviors. The cues used by children included eye-contact and gaze, smiling, and nodding. The important finding was that older children used more of these responses, both in number and kind, than did younger children.

Lechner et al. (1986), using the paradigm established in Miller et al. (1985) also looked at the use of backchannel responsive behaviors in relation to preschoolers' popularity as rated by teachers and peers. The results indicated no apparent relationship between preschoolers' use of responsive behaviors and ratings of popularity. It was hypothesized that listener skills for preschool children may not be important variables in popularity. Young children may have different

expectations for interactions with peers than with adults (Holmberg, 1980).

A more recent study (Hazen & Black, 1989) investigating more global kinds of communication skills did find a relationship between social attraction and a related communication skill, conversation maintenance. While this study was an important step, in that it linked social attraction to use of communication skills, it did not investigate the use of specific listening skills such as backchannel behaviors. The present study provides this important link.

Age Differences

At the onset of this study it was expected that use of backchannel listening behaviors would increase, both in amount and kind, and would continue to develop during the elementary years. Because significant growth had been noted between the ages of three and five (Miller et al., 1985), growth was expected to continue into the early and middle elementary years. This, however, was not the case. There were no significant differences, either in number or in kind, between first graders and fifth graders with respect to their use of

responsive listening skills. In fact, the same listener behaviors that had been identified in previous research were also observed in the present research.

This finding should not have been surprising; it may represent a ceiling effect for the acquisition of these skills. It is apparent that by the age of five, children are fully prepared to be active listeners, both responsively and didactically, in interactions with adults. Lack of additional acquisition beyond the age of five only indicates that the skills are fully developed. Interestingly, the age in which the use of responsive listening skills is fully developed, also coincides with that magic age of five selected by educators as the age when children are prepared to begin school. It appears that five is a developmental milestone in the acquisition of responsive listening skills.

What is interesting are the expectations that researchers may have when looking for developmental changes in humans. Scarr (1985) suggested that researchers are influenced by society's standards, and that these influences even affect the very questions we choose to study. Presently, society

seems to view change in terms of ever increasing quantities and numbers of behaviors, with quantitative changes increasing along some sort of developmental time table. With this kind of expectation, one may be misled into assuming that the use of these responsive listening skills would continue to develop quantitatively beyond the age of five. However, this research does not support that concept. What has been shown is that these skills begin to change qualitatively in terms of use and function. These qualitative developmental changes are described below.

Developing Functions

What was found to change after the age of five is the function of these skills. Lechner's research (1986) indicated that before the age of five, these listener behaviors could be elicited by both peers and adults, but were not found to relate to important variables such as popularity. Present findings have begun to establish the relationship between the use of responsive listening skills and popularity, or social attractiveness. While the relationships between use of responsive listening skills and popularity are not as extensive as has

been shown in adults (Miller at al., 1983), the findings indicate that relationships are clearly emerging.

In this research this relationship emerged most clearly in smiling behavior. Based on what is known about smile behavior, it was not surprising that the dependent measure Smile was the first listening behavior that began to show a relationship to social attractiveness. Smile, as indicated previously, is the first observable responsive listening behavior reported in infants, and smiling is also one of the first socially responsive behaviors documented. In terms of development, then, it makes sense that smiling would be the first responsive behavior to begin to be used actively as a social agent.

Significant findings were noted with boys. As predicted, boys who engaged in more smiling were better liked by teachers. However, this finding was not supported with peers. These same boys who demonstrated more smiling behavior, were in fact, rated as significantly less popular by peers. While not significant, there was a similar trend observed in the data from girls. Girls who engaged

in more smiling tended to be rated as less popular by peers.

There are several explanations for this result. Clearly, it appears that a teacher would use different criteria for making popularity choices than would peers. Adults, who rely on listening cues when interacting with other adults, may use these same indicators for measuring attractiveness in children. Therefore, variables like smile, which indicate listening, become important for making attractiveness decisions. However, among children, smiling may not be as important in making attractiveness decisions as it is for adults. More active kinds of behaviors and non-language related variables such as play skills may be more important and more salient than the passive and subtle backchannel listening behaviors.

It may also be that because backchannel behaviors are more subtle, children may not even be attending to them. The skilled adult, on the other hand, not only attends to them in children, but also relies upon them when making popularity decisions.

Another explanation for differences between how children and adults rate popularity may be in terms

of role expectations. While teachers were asked to rate popularity in terms their social interactions with each child, it would be difficult for teachers to ignore the wealth of other data they use to evaluate children on a daily basis. For example, a student may have successful one-to-one interactions with the teacher, but poor and disruptive relations with peers. This kind of information may color the teacher's perception of popularity.

Gender Differences

Results indicated that gender differences in the use of responsive listening skills began emerging among elementary aged children. While some data supported predicted relationships between use of listening skills and popularity for boys, the findings in this study failed to show a direct relationship between use of listening skills by girls and ratings of popularity by peers and teachers. This can be partially explained in that girls were rated as significantly more popular than boys, by both teachers and peers. Hence, there were fewer "unpopular" girls for purposes of comparison. In both peer and teacher ratings, more than two-thirds of the girls were rated as having a

high popularity status. It was apparent that teachers, boys, and girls tended to rate girls as being better liked.

Despite the overall popularity of girls, there remains an interesting twist to this data. Girls as early as age six have demonstrated a higher use of certain responsive listening skills than their male counterparts. The findings indicated that girls engage in significantly more gazing than do boys. This finding dovetails well with research on adults. Adult females have been shown to engage more nonverbal responses, such as gazing, than do adult males (Miller, Berg, and Archer, 1983).

Thus far, the data support expectations that girls are, in general, rated as more popular and that they use more nonverbal responsive listening skills, such as gaze, than boys do. However, when attempting to find a direct relationship between girls' gaze behavior and popularity, an inverse relationship was found. This finding was supported with data on boys as well. It was apparent that students who engaged in less eye-contact were rated as more popular by peers and teachers.

One explanation is that certain children may possess fewer listening skills and may also possess

poorer social skills. These children, then, when presented with a relatively novel social situation with a somewhat unfamiliar adult, may engage in more passive listening. Instead of actively engaging with the speaker and openly eliciting additional interaction, these students, presumably less sure of their ability to communicate, find it safer to quitely watch and listen. These same non-participatory observers, then, demonstrate more gazing, but they also have been rated by peers and teacher as being less liked and less popular.

Another possible explanation is that measures of listening skills were taken during interactions by an adult who did not rate subjects for social attractiveness. A graduate student interacted with students when listening skills were measured, and teachers and peers provided popularity ratings. Hence, some of our observed listening patterns may not truly reflect listening patterns between our experimental subjects and those who rated them for social attractiveness and liking. In the adult literature (Miller, et al. 1983), subjects were rated for popularity by the same people with whom they interacted when listening skills were measured.

Responsive Listening and Academic Success

Consistent with predictions, there is evidence linking the use of responsive listening skills to academic achievement. As in social attractiveness, it was smiling that again became the important variable; this time in relation to academic achievement.

Students who engaged in more smiling tended to earn higher grades and higher standardized achievement scores in language. Since language development is an important part of communication, this relationship is expected. Communicating involves a rich interchange between the speaker and listener. Much information is exchanged both in verbal and nonverbal channels. It appears that the spoken word, nonverbal messages, and language content are all intertwined and employed simultaneously to express meaning.

Students who engaged in more smiling also tended to perform better in reading. Because language is an integral part of reading and communication, the heavy language base of reading may explain the relationship between responsive listening skills and reading.

Other Important Factors for Determining Social Attractiveness

Other factors which also are important variables in determining popularity among children are characteristics such as school achievement, age, and peer gender. This section will explore these correlates and discuss how they may relate to popularity.

Academic Achievement and Social Attractiveness

Thus far, two important relationships have been indicated by this research. First a relationship has been established between use of responsive listening skills and social attractiveness (popularity). Second a relationship has also been identified between responsive listening and academic achievement. The logical next step in this analysis is to establish a link between academic achievement and popularity. This would provide valuable information which would help to describe a more global view of what makes children academically and socially successful.

The results did establish a link between academic success and popularity. Clearly, students who possessed higher language and reading skills,

as measured by school grades and standardized achievement scores, were rated as more popular by teachers and peers. Academic achievement, then, appears to be another important factor in determining social success in school.

Age, Gender and Social Attractiveness

With respect to age, older peers were consistently rated as more popular than their younger counterparts. It is surmised that older children, possessing more skills, are seen as more socially attractive. In fact there is research indicating that older children tend to be communicatively responsive to the needs of younger children. Shatz and Gelman (1973) demonstrated that older children actively adjusted their language to adapt to the needs of younger peers. This may be the kind of communicative responsiveness that made younger children rate older children as more popular in this study.

Another important variable, identified as a factor for making popularity decisions, was the gender of subjects. Results clearly indicated that girls are liked more than boys by both teachers and

peers. Among peers, both boys and girls tended to rate girls as more popular.

When considering these data, some conclusions may be made about which children will be seen as popular by teachers and peers. It appears that some students who are rated as socially attractive tend to engage in more responsive listening, such as smiling. These students have better developed academic and language skills, are female, and tend to be older than their peers.

Race Differences

This final section explores potential race differences in the use of responsive listening skills. Some related research (Schieffelin & Ochs, 1983) suggested that cultural factors are important factors which do influence language development and communication. Thus, one might expect some cultural differences in the way Caucasian and African American children utilize responsive listening skills. However, this aspect of the study has been viewed as speculative, partly because there is no previous research that addresses race differences with respect to responsive listening. Therefore, while race differences may be expected, no predictions could

be made and the findings must be discussed with some degree of caution.

Listening differences were noted between Caucasian and African American subjects. Caucasian subjects were shown to engage in significantly more Smile and Total responsive listening behaviors. These differences probably emerge from cross-cultural listening style differences. These cross cultural factors were not controlled for in the study.

In fact, since experimenters and teachers were Caucasian, there was no opportunity in this study for the African American students to interact with an adult from their own race. It should be noted that despite possible cross cultural factors, teachers and peers did not use race as a factor when making popularity choices (Teachers: $F=2.2$, $p>.10$; Peers: $F=.163$, $p>.10$).

Experimenters were asked to describe subjects' behavior during the study. While this information has little scientific value, the experimenters reported that the African American students appeared to be more quiet and passively attentive, while Caucasian subjects were more verbal. These observational differences may reflect cultural

factors, or the observed behaviors may be indicative of a child when interacting with an adult from another race or culture group.

In support of observations by experimenters, a non-significant trend indicated that African American students engage in more gazing (passive attentive behavior) than Caucasian students (t=1.41, p=.16). This trend is not significant, but it may indicate that gazing tends to be used more by the African American students. However, increased gazing may be expected when other listening behaviors are not present, and it may also indicate, as described earlier, either cultural differences or a cross-cultural effect between children and experimenters of different races.

Because cross-cultural factors were not controlled for, few conclusions can be made about the listening skills of African American students. However, what can be noted is that a clear listening style difference was indicated between races when interacting with Caucasian adults. This listening style difference did not appear to affect the social standing of African American students,

as there were no race differences between ratings of popularity by teachers or peers.

This finding may have implications for Caucasian adults, including teachers who work with children of other races. Schieffelin and Ochs (1983), who investigated cross-cultural care-giver speech differences, noted the importance of cross-cultural speech patterns when working with children of different races. The same may be true with respect to responsive listening skills. It may be that when working with an adult of another race, children tend to respond more passively and compliantly (gaze behavior), avoiding the more active responsive listening skills (Smile and Total). Teachers, and other adults working with children of different races, may need to be aware that listening style differences may occur. These listening style differences may influence interactions between cross-cultural individuals. In the classroom where listening skills are important for learning, this becomes even more important.

Directions for Future Research

This study answered some of the questions pertaining to the development of responsive

listening skills. For early elementary aged children, there is an emerging relationship between responsive listening and smile behavior and popularity. However, the connection between the early appearance of smile behavior in infants (as the first responsive behavior to develop) and the impact that smiling has (as the first responsive behavior to develop a relationship to popularity) in early elementary aged children is significant. The development of smile behavior may recapitulate in a different form for early elementary aged children. Function and purpose become the developmental task. Is it possible that specific responsive listening skills develop initially in a quantitative and chronological order? Is it possible that this development is later recapitulated when this specific class of behaviors begins to develop qualitatively in terms of function? These questions need to be addressed through additional research.

Another finding was that teachers and peers seemed to rely on different cues when making popularity decisions. Relationships between teacher rated popularity and responsive listening were identified. However, this was not the case

for peer popularity. What variables are important for determining popularity among peers at this age? When do children begin to more closely approximate adults in making decisions about social attractiveness and liking? What biases might teachers carry when making popularity choices? How might unfamiliar adults rate these same children socially?

Gender differences in children which approximate those seen in adults were also identified in this study, namely with respect to gaze behavior. When do gender differences for the remaining responsive listening behaviors begin to emerge? More interesting, with respect to gaze behavior, was the finding that students who engaged in more gaze behavior were also rated as less popular. It was surmised that these children may indeed possess fewer social skills and may utilize gaze as a compliant behavior. This issue may also be addressed through additional research.

Findings on race indicated that African American and Caucasian children may rely upon different listening skills. African American children utilized more gaze, while their Caucasian counterparts used more verbal and smile behavior.

This finding may be the result of cross-cultural issues not controlled for in this research. Are there true cultural differences? If so what cross cultural differences might we find when children relate to a care-giver of a different race? Thess questions can also be addressed by additional investigation.

Summary

This study clearly demonstrated technical adequacy. Being the third in a series, the methods for measuring listening skills and social attractiveness are well developed. As in previous research these measures have been shown to be easily administered, as well as reliable and valid.

Related research helps to put this study into perspective. Responsive listening skills, in the form of a reflexive smile, have been demonstrated at birth (Rheingold, 1969; Schaffer, 1977; Stern, 1974). At six weeks of age gazing and smiling become more purposeful and social (Kaye and Fogel, 1980). Into the preschool years, backchannel and responsive listening behaviors develop (Miller et al., 1985). These socially responsive behaviors indicate attention and listening in preschoolers,

but they were not shown to be related to social attractiveness or popularity (Lechner, 1986)

This study provided a preliminary link between use of responsive listening skills and social attractiveness. The data provided a clear relationship between smiling and teachers' ratings of popularity in boys. This is a noteworthy finding, as the development of smile behavior may recapitulate in a different form for early elementary aged children. Function and purpose becomes the developmental task.

This relationship between smiling and teacher rated popularity, however, was not duplicated for peer rated popularity. Smiling was not related to popularity with peers. One explanation may be that teacher and peers use different criteria for measuring social attractiveness. Backchannel behaviors are more subtle and may not be attended to by peers as much as is noted by skilled adults. Also, role expectations may lead to different judgements of popularity for teachers and students.

This study also provided a developmental time frame in which gender differences with respect to use of responsive listening skills begin to approximate gender differences as seen in adults.

By the age of six, girls engage in significantly more gaze behavior than boys. Not only are girls using more responsive listening and attending, but similar to their adult counterparts, they are choosing to engage in more nonverbal behavior.

The inverse relationship between use of gaze and social attractiveness indicated that students who did less gazing tended to be rated as more popular. While this finding appears contradictory, it may be that students with fewer social skills, and consequently rated as less popular, use gaze as compliant behavior, especially when interacting with adults.

Relationships between academic success and responsive listening were also demonstrated. Students who engaged in more smiling tended to receive higher grades in reading and language, and also had higher standardized achievement scores in language. It was concluded that language development was the key variable that related significantly with responsive listening. Relationships were also established between academic achievement and social attractiveness. Students with better language development were also shown to be rated as more popular.

Age and gender were also important variables in predicting popularity. The findings indicated that girls were liked better than boys, and that within age groupings, older peers were seen as more popular than their younger counterparts.

Summarizing these findings, some generalizations may be made about which children will be seen as popular by teachers and peers. It appears that some students who are rated as socially attractive tend to engage in more responsive listening, such as smiling, have better developed academic and language skills, are female, and tend to be older than their peers.

Some differences related to race were also noted in this research. Caucasian children tended to engage in different forms of responsive listening than did their African American counterparts. Caucasian children were shown to use more verbal responses and more smiling, while African American children tended to engage in more gaze. This finding, however, must be reviewed with caution. Because experimenters were only Caucasian, there may have been some cross-cultural differences that were not controlled for in this study. However, this finding may have implications

for adults, especially teachers, who work with minority children. Listening style differences may influence interactions between cross-cultural individuals. This is especially important in classrooms where listening skills are most important.

Finally some directions for future research were indicated. Some important, yet unanswered questions include: Is it possible that specific responsive listening skills develop initially in a quantitative and chronological order? Is it possible that this development is later recapitulated when this specific class of behaviors begins to develop qualitatively in terms of function? What variables are important for determining popularity among peers at this age? When do children begin to approximate adults more closely when making decisions about social attractiveness and liking? What biases might teachers carry when making popularity choices? How might unfamiliar adults rate these same children socially? Are there true cultural differences? If so what cross cultural differences might we find when children relate to a care-giver of a different

race? All of these questions may be addressed through further research.

CHAPTER VI

SUMMARY

Five important questions about relationships between responsive listening skills and social attractiveness, academic achievement, age, gender, and race were the focus of this study. These questions, which addressed the main issues raised in this research, include:

1. As a group, do socially attractive students use more responsive listener behaviors than socially unattractive subjects on both the teacher reported and peer reported popularity measures?
2. Are there relationships between use of listener skills and academic achievement? Do higher achieving students use more responsive listener behaviors than lower achieving peers?
3. Do older children use more responsive listener behaviors than younger subjects?
4. Are there gender differences with respect to type and function of listener behaviors utilized by males and females?
5. Are there any between group differences, in type and function, of responsive behaviors between Caucasians and African Americans?

To answer these questions, two important instruments were developed which were utilized to measure listening skills and social attractiveness. A special story-type script, developed by Miller et al. (1983) was updated and verbally presented to students in an effort to approximate conversation. This script has been shown to reliably elicit responsive listener behaviors in children (Miller et al., 1983; Lechner et al. 1986).

Popularity questionnaires, utilized by teachers and peers, were also updated from previous research (Lechner et al., 1986). Peers were presented their class picture and asked a series of questions following research suggestions from Hazen, et al. (1989). The teacher popularity measure involved a brief questionnaire in which teachers were asked to rate students on how much they enjoyed interacting with individual students.

The subjects in this study attended two schools from a middle to lower-middle socio-economic suburb of Chicago. There were 101 subjects, one-third each from first grade, third grade, and fifth grade respectively. Subjects were also approximately evenly divided by race and gender.

A special room was set up which provided a standardized testing environment where videotaping could take place. In the room were a table and chairs, where the experimenter and subject faced each other, and a teacher's desk piled with books. Behind the desk was the camera and video-equipment. The only observable part of the equipment was the camera lens which peered over the books and faced the student.

Subjects were first familiarized with the experimenters and the testing room to assure comfort and maximum attention during data collection. The experimenter had two graduate student assistants who served as experimenters during data collection. Experimenters visited the classrooms of their subjects and explained the study to students utilizing a standard format. Subjects were also individually escorted to the testing room to familiarize them with the video equipment and to show students their class picture to assure that all subjects were familiar with classmates.

Following familiarization, data collection for responsive listening skills, social attractiveness, and academic achievement began. Subjects were

individually escorted to the testing room and participated in an approximately four-minute video-taped interaction which involved the conversational presentation of the memorized story script. Subjects were encouraged to respond verbally, "and any time you wish to stop and say something you may..."

Upon completion of this interaction, popularity measures were administered. Subjects were shown their class photograph and asked a series of questions which provided information concerning peer popularity. Teachers were asked to anonymously rate students on how much the teachers themselves liked each individual student. The final data collected were taken from students' files where recent standardized achievement scores and final grades in reading, spelling, and language were obtained.

The dependent measures targeted in this study were the specific responsive listener skills identified in Miller et al. (1983). These listener behaviors included the amount of time subjects spent gazing and smiling, and the number of nods, "yeses," "uh-huhs, "ohs," and "okays" emitted by subjects. Five independent observers were first

trained according to a standardized format before they coded the video-tapes for these specific dependent measures. As a measure of reliability, the experimenter also coded 30 percent of the tapes, chosen at random. Inter-rater reliabilities ranged from .69 to .98 ($p<.001$). Other analyses then investigated relationships between listening skills and social attractiveness, academic achievement, age, gender, and race of subjects.

The analysis began with investigations supporting the reliability and validity of the measures used to collect data. Next came the analyses supporting relationships between use of responsive listening skills and popularity.

Supporting predictions, the data indicated that boys who engage in more smiling scored higher on teacher popularity measures. No significant results were identified for girls. Contrary to predictions, significantly more gazing was done by low teacher popular students of both genders.

Similar results were obtained from peer popularity data. While not significant, there was a trend indicating that more gazing was done by low peer popular boys. A significant finding, contrary to predictions, was also noted when low peer

popular boys were found to engage in more smiling than their more popular counter-parts. There were no significant results supporting any findings for girls at this level.

Results established relationships between use of listening skills and academic achievement. Analyses indicated that students who engaged in more smiling tended to also earn higher California Achievement Test (CAT) scores in language and reading. Smiling was also found to relate significantly to grades in language. There appears to be no relationship between use of responsive listening skills and spelling.

When age, gender, and race were variables of concern, there appeared to be no age differences with respect to how children use these listening skills. However, there were some gender differences. It appears, as predicted, that girls engage in more gazing than do boys. Race differences were also identified. It appears that Caucasian subjects engage in significantly more Smile and Total than do their African-American counterparts.

Relationships between popularity and academic achievement have also been noted. Highly popular

students, both with teacher and peers, tended to earn higher grades and higher CAT scores in language. More popular students also earned better reading scores on the CAT.

Finally, relationships between popularity ratings and age and gender differences of subjects were reported. It was found that older subjects were better liked by peers than younger students. It was also demonstrated that girls are liked better than boys, both as rated by teachers and peers.

While there was evidence supporting predictions made at the onset of this research, there were also conflicting results. A discussion of these findings was made in an attempt to shed light on apparent discrepancies.

This study clearly demonstrated technical adequacy. Being the third in a series, the methods for measuring listening skills and social attractiveness are well developed. As in previous research these measures have been shown to be easily administered, as well as reliable and valid.

Related research helps to put this study into perspective. Responsive listening skills, in the form of a reflexive smile, have been demonstrated

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Appendix A

Letter to Parents and Informed Consent Form

Project Title: The Listener Skills of School Aged Children

I, _____, the parent or guardian of

_____, a minor of _____ years of age, hereby consent to his/her participation in a research project being conducted by Raymond Lechner.

Possible risks and discomforts: Based on previous similar research there is no known risk to children in this study.

Potential Benefits: Knowing the importance of listener skills for adults, the benefits of this research in children is significant. Once we discover when developmental use of these listener skills begins to relate to social attractiveness, social skills programs may be more aptly targeted. In the schools, where time is a premium, early and efficient intervention would be valued.

Alternatives: Children will be told that they may discontinue at any time, and will be allowed to withdraw, without penalty or any pressure to continue, when they choose.

I acknowledge that Raymond Lechner_____ has fully explained to me the risks involved and the need for the research; has informed me that I may withdraw my child from participation at any time without prejudice; has offered to answer any inquiries which I may make concerning the procedures followed; and has informed me that I will be given a copy of this consent form.

I freely and voluntarily consent to my child's participation in the research project.

_____
Child's Birth date

_____ _____
Signature of Researcher Signature of Parent

Date _____ Date _____

Letter to Parents

Dear Parents:

The purpose of this letter is to ask your permission for your child to participate, at school, in our study of the listening skills of elementary aged children. Approval of this study has been received by the Board of Education and from the Institutional Review Board for the protection of human subjects at Loyola University of Chicago.

Our study looks at the tendency of children to use various conversational cues ("uh-huhs," "yesses," smiles, head nods) when listening to someone else. It is designed to see when young children develop these listener skills, whether they use these skills when interacting with adults, and how the use of these skills relates to childrens' social interactions and relationships in school.

In a single 5-minute session, an adult will tell the child about his experiences when he was little (such as favorite toys, games, pets). While the child listens to the adult, his or her conversational responses will be video-recorded for

later coding. Next, children will be asked 8 brief questions about their interests in school, such as: "What fun things do you like about school?" "Which friends do you like to play with most?" The remainder of the data will be collected from teachers; no additional direct contact would be required with your child.

We hope that you will agree to your child's participation in this study. This study has been completed at two other locations in this state and is generally fun for students to participate. Our results will be reported in terms of how children as a group perform; your child's individual scores would never be reported to or discussed with anyone. At the completion of this project, you may observe the tape of your child, before all videotapes are erased. Of course, as parents you have the right to withdraw your consent and to discontinue your child's participation at any time.

Please fill out and sign the attached form letting us know if your child may join us. Please return the form to your child's teacher as soon as possible. We appreciate your consideration of this request.

As is your right, if you have any questions please do not hesitate to call.

Sincerely,

Ray Lechner
Dist. 87 Psychologist
Office: 547-3095

Dr. Carol Harding
Professor, Loyola University

Appendix B

Script

(Adapted from Miller, Lechner & Ruggs, 1985)

Today I'm interested in how children and adults talk to each other and what they have to say to each other. So I am going to talk to you about a few things. I have a few cards in my pocket and each has a different topic on it, so let's pick one and see what we will talk about. Ah, we are going to talk about things that happen to children.

At home I loved my bicycle the most. I used to ride my bike up and down the sidewalk. The sidewalk had a hill, so I could ride down the hill really fast without pedaling. One time I went too fast and fell and skinned my nose. It hurt really bad, so I ran home to Mom and she made it feel better. My bicycle was broken too; the wheel was bent. But, my dad fixed it the next day. He's really good at fixing things.

I had lots of pets too. I had a cat and one time we had kittens. They were really soft and cuddly. Mom and Dad said that we weren't supposed to touch them until they were old enough. One time

I touched one and my parents told me not to do that again.

I also had a dog. She was friendly and always played. And, I had some goldfish and some guppies too, It was my job to feed them every day. I liked watching them swim round and round.

I also had a brother and a sister to play with. We played every day. We always played games like hide and seek, and had races too. Sometimes we got mad at each other, and sometimes we had a fight; that's when our parents made us stop and sit in a corner.

Well let's stop here and see what the next card says. Ahhhh! It say, "What do you know about Batman?" Did you see the movie? I saw it last summer. I liked the part near the beginning when a thief sneaked up to a boy with his parents and stole their money? But Batman came right away and taught that thief a lesson! They were sure surprised to see a 6 foot tall bat!

I thought the funny part was when the Vicki Vale went to Bruce Wayne's mansion for the first time. She and her friend were making fun of Bruce Wayne's stuff in his museum. They didn't even

realize that Bruce Wayne him standing behind them! She didn't even realize that he was Batman!

The Batmobile really was neat. It could do all sorts of fun things and boy did it drive fast! Batman could make it do anything he wanted just by talking into a remote control. I wish I had one of those for my car!

What about that Batwing? It could really fly fast. It flew sideways between buildings and even upside down. Batman needed the Batwing to help him catch the Joker. After he caught the Joker Batman flew the Batwing right through the clouds and up by the moon. Then it looked just like the bat symbol on my T shirt.

Wow! That sure was a good movie. It was funny and scary and happy too! Well I am out of cards now. I guess we are done. Thanks for helping me out. You have been a very good listener.

Appendix C

Teacher Questionnaire

(Adapted from Miller, Lechner & Ruggs, 1985)

Teacher#_____

(Please do not write your name on this sheet.)

Below is a list of your students. Please rate each of these children according to how much you enjoy interacting with them, following the scale the scale provided. Remember, enjoyable students are those who you like and with whom you generally have successful social interactions. This might be a student that you would like to sit beside at lunch time. Please give each student one score, ranging from one to seven, based on the following:

1	2	3	4	5	6	7
very unenjoyable	moderately unenjoyable	about average	moderately enjoyable	very enjoyable		

"1" indicates very unenjoyable, not at all liked, unsuccessful in social interactions; "4" indicates average, adequate social interaction, liked by some; "7" indicates very enjoyable, generally likeable, having successful social interactions.

Student Number_____

1	2	3	4	5	6	7
very unenjoyable	moderately unenjoyable	about average	moderately enjoyable	very enjoyable		

Student Number_____

1	2	3	4	5	6	7
very unenjoyable	moderately unenjoyable	about average	moderately enjoyable	very enjoyable		

Student Number_____

1	2	3	4	5	6	7
very unenjoyable	moderately unenjoyable	about average	moderately enjoyable	very enjoyable		

Student Number_____

1	2	3	4	5	6	7
very unenjoyable	moderately unenjoyable	about average	moderately enjoyable	very enjoyable		

Student Number_____

1	2	3	4	5	6	7
very unenjoyable	moderately unenjoyable	about average	moderately enjoyable	very enjoyable		

Appendix D

Data Collection Sheet

Date_____ Subject_____ Sex___

Race_____ Birthdate_____ Age_____

Teacher_____ School_____

Three Favorite Peers	Three Least Favorite Peers
1._____	1._____
2._____	2._____
3._____	3._____

Peer Rating Score_____ Teacher Rating Score_____

Academic

Reading Score_____Spelling Score_____Language Score___

Reading Grade_____Spelling Grade_____Language Grade___

Responsive Behaviors	Sum	#Per Min
Yesses		
Okays		
Uh Huhs		
Ohs		
Nods		
Other		

Total_____ Total/Min_____

Total Time (mins/secs)_____

Smile Time (mins/secs)_____ %Time_____

Gaze Time (mins/secs)_____ %Time_____

Appendix E

Class Presentation of Study

Hi boys and girls. I am Ms/Mr_____ . You have probably seen me in your school. I am here to tell you that your class has been specially chosen to participate in a research study. A research study is like an experiment. When we have questions about an interesting topic we sometimes devise a study, or experiment, to help us find the answers. The study that your class has been chosen to do is about how adults and children talk to each other and what they have to say to each other.

If you participate in this study, you and I will talk about a few things. It won't take very long, only three or four minutes of your class time. Also, you will be videotaped by a camera that will be set up in the Specialty Room. Before you can participate in this study you will have to have your parent's permission. Also, even after your parent gives you permission to join the study, you may choose not to participate at any time. This study is a lot of fun. It was done at another school once before and the children liked what they did. I have given your teacher the permission slips for you to take home. They must be

returned in one week. You must have a signed permission slip before you can participate. Does any one have any questions?

Appendix F

Analyses of Variance

Language Grades by Listening

Language by Gaze:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0059	01	0.0059	0.1073	.74
Within Groups	5.4080	99	0.0546		
Total	5.4138	100			

Language by Smile:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.1349	01	0.1349	3.6918	.05
Within Groups	3.6172	99	0.0365		
Total	3.7521	100			

Language by Total:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0000	01	0.0000	0.0028	.95
Within Groups	0.0865	99	0.0009		
Total	0.0865	100			

Appendix G

Analyses of Variance

Language Scores by Listening

Language by Gaze:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0152	01	0.0152	0.2721	.60
Within Groups	5.3705	96	0.0559		
Total	5.3857	97			

Language by Smile:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0869	01	0.0869	2.2958	.13
Within Groups	3.6328	96	0.0378		
Total	3.7197	97			

Language by Total:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0000	01	0.0000	0.0052	.94
Within Groups	0.0861	96	0.0009		
Total	0.0861	97			

Appendix H

Analyses of Variance

Reading Grades by Listening

Reading by Gaze:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0013	01	0.0013	0.0212	.88
Within Groups	5.0075	83	0.0603		
Total	5.0087	84			

Reading by Smile:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.1127	01	0.1127	2.7997	.09
Within Groups	3.3412	83	0.0403		
Total	3.4539	84			

Reading by Total:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0008	01	0.0008	0.8561	.35
Within Groups	0.0782	83	0.0009		
Total	0.0790	84			

Appendix I

Analyses of Variance

Reading Scores by Listening

Reading by Gaze:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0240	01	0.0240	0.4291	.51
Within Groups	5.3618	96	0.0559		
Total	5.3857	97			

Reading by Smile:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0815	01	0.0815	2.1518	.14
Within Groups	3.6382	96	0.0379		
Total	3.7197	97			

Reading by Total:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0003	01	0.0003	0.2949	.58
Within Groups	0.0858	96	0.0009		
Total	0.0861	97			

Appendix J

Analyses of Variance

Spelling Grades by Listening

Spelling by Gaze:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig F
Between Groups	0.0655	01	0.0665	1.231	.27
Within Groups	5.3473	99	0.0540		
Total	5.4138	100			

Spelling by Smile:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig F
Between Groups	0.0001	01	0.0001	0.0029	.95
Within Groups	3.7520	99	0.0379		
Total	3.7521	100			

Spelling by Total:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig F
Between Groups	0.0008	01	0.0008	0.9079	34
Within Groups	0.0857	99	0.0009		
Total	0.0865	100			

Appendix K

Analyses of Variance

Spelling Scores by Listening

Spelling by Gaze:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0242	01	0.0242	0.3155	.57
Within Groups	4.8416	63	0.0769		
Total	4.8658	64			

Spelling by Smile:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0038	01	0.0038	0.1213	.73
Within Groups	1.9904	63	0.0316		
Total	1.9943	64			

Spelling by Total:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0001	01	0.0001	0.1029	.75
Within Groups	0.0537	63	0.0009		
Total	0.0538	64			

Appendix L

Analyses of Variance

Language Scores by Popularity

Language by Teacher Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	29.380	01	29.38	14.36	.001
Explained	29.380	01	29.38	14.36	.001
Residual	128.866	63	02.04		
Total	158.246	64	02.47		

Language by Peer Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	44.615	01	44.615	09.126	.004
Explained	44.615	01	44.615	09.126	.004
Residual	308.000	63	04.889		
Total	352.615	64	05.510		

Appendix M

Analyses of Variance

Language Grades by Popularity

Language by Teacher Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	1.4258	01	1.4258	6.0081	.01
Within Groups	23.0187	97	0.2373		
Total	24.4444	98			

Language by Peer Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.7828	01	0.7828	3.4319	.06
Within Groups	22.1262	97	0.2281		
Total	22.9091	98			

Appendix N

Analyses of Variance

Reading Scores by Popularity

Reading by Teacher Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	19.156	01	19.156	11.03	.002
Explained	19.156	01	19.156	11.03	.002
Residual	90.326	52	01.737		
Total	109.481	53	02.066		

Reading by Peer Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	13.799	01	13.799	02.517	.119
Explained	13.799	01	13.799	02.517	.119
Residual	285.034	52	05.481		
Total	298.833	53	05.638		

Appendix O

Analyses of Variance

Reading Grades by Popularity

Reading by Teacher Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	1.0362	01	1.0362	4.3379	.04
Within Groups	19.3493	81	0.2389		
Total	20.3855	82			

Reading by Peer Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.5485	01	0.5485	2.4673	.12
Within Groups	8.0057	81	0.2223		
Total	18.5542	82			

Appendix P

Analyses of Variance

Spelling Scores by Popularity

Spelling by Teacher Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	04.455	01	04.455	02.35	.133
Explained	04.455	01	04.455	02.35	.133
Residual	79.727	42	01.898		
Total	84.182	43	01.958		

Spelling by Peer Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	01.455	01	01.455	0.279	.600
Explained	01.455	01	01.455	0.279	.600
Residual	218.727	42	05.208		
Total	220.182	43	05.121		

Appendix Q

Analyses of Variance

Spelling Grades by Popularity

Spelling by Teacher Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0053	01	0.0053	0.0211	.88
Within Groups	24.4391	97	0.2519		
Total	24.4444	98			

Spelling by Peer Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Between Groups	0.0569	01	0.0569	0.2416	.62
Within Groups	22.8522	97	0.2356		
Total	22.9091	98			

Appendix R

Analyses of Variance

Age by Popularity

Age by Peer Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	23.925	01	23.925	05.34	.023
Explained	23.925	01	23.925	05.34	.023
Residual	434.620	97	04.481		
Total	458.545	98	04.679		

Age by Teacher Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	01.079	01	01.079	0.525	.471
Explained	01.079	01	01.079	0.525	.471
Residual	199.547	97	02.057		
Total	200.626	98	02.047		

Appendix S

Analyses of Variance

Gender by Popularity

Gender by Peer Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	45.455	01	45.455	10.67	.002
Explained	45.455	01	45.455	10.67	.002
Residual	413.091	97	04.259		
Total	458.545	98	04.679		

Gender by Teacher Popularity:

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	09.758	01	09.758	4.959	.028
Explained	09.758	01	09.758	4.959	.028
Residual	190.868	97	01.968		
Total	200.626	98	02.047		

Appendix T

Table of Means With Cell Sizes for Gazing

	Code*	Mean	Std. Dev.	N
Race	Black			
Sex	Male			
Peerscr**	1			
Tchrscr**	1	.928	.045	6
Tchrscr	2	.899	.080	3
Peerscr	2			
Tchrscr	1	.976	.028	2
Tchrscr	2	.474	.389	4
Sex	Female			
Peerscr	1			
Tchrscr	1	.919	.070	4
Tchrscr	2	.880	.081	4
Peerscr	2			
Tchrscr	1	.893	.139	10
Tchrscr	2	.717	.306	11
Race	White			
Sex	Male			
Peerscr	1			
Tchrscr	1	.591	.302	8
Tchrscr	2	.842	.038	4
Peerscr	2			
Tchrscr	1	.742	.197	9
Tchrscr	2	.660	.291	8
Sex	Female			
Peerscr	1			
Tchrscr	1	.828	.022	2
Tchrscr	2	.738	.372	5
Peerscr	2			
Tchrscr	1	.875	.103	3
Tchrscr	2	.848	.116	16
For entire sample:		.785	.235	99

* 1= low popularity status 2= high popularity status

** Peerscr= Peer popularity rating
Tchrscr= Teacher popularity rating

Appendix U

Table of Means With Cell Sizes for Smiling

	Code*	Mean	Std. Dev.	N
Race	Black			
Sex	Male			
Peerscr**	1			
Tchrscr**	1	.101	.220	6
Tchrscr	2	.376	.326	3
Peerscr	2			
Tchrscr	1	.176	.044	2
Tchrscr	2	.067	.093	4
Sex	Female			
Peerscr	1			
Tchrscr	1	.024	.022	4
Tchrscr	2	.018	.028	4
Peerscr	2			
Tchrscr	1	.099	.092	10
Tchrscr	2	.054	.072	11
Race	White			
Sex	Male			
Peerscr	1			
Tchrscr	1	.059	.069	8
Tchrscr	2	.307	.336	4
Peerscr	2			
Tchrscr	1	.122	.137	9
Tchrscr	2	.111	.102	8
Sex	Female			
Peerscr	1			
Tchrscr	1	.369	.075	2
Tchrscr	2	.231	.251	5
Peerscr	2			
Tchrscr	1	.193	.317	3
Tchrscr	2	.265	.269	16
For entire sample		.146	.195	99

* 1= low popularity status 2= high popularity status

** Peerscr= Peer popularity rating
Tchrscr= Teacher popularity rating

Appendix V

Table of Means With Cell Sizes for Total

Code*		Mean	Std. Dev.	N
Race	Black			
Sex	Male			
Peerscr**	1			
Tchrscr**	1	.010	.016	6
Tchrscr	2	.002	.004	3
Peerscr	2			
Tchrscr	1	.027	.032	2
Tchrscr	2	.017	.017	4
Sex	Female			
Peerscr	1			
Tchrscr	1	.009	.013	4
Tchrscr	2	.021	.023	4
Peerscr	2			
Tchrscr	1	.011	.007	10
Tchrscr	2	.030	.038	11
Race	White			
Sex	Male			
Peerscr	1			
Tchrscr	1	.043	.041	8
Tchrscr	2	.026	.031	4
Peerscr	2			
Tchrscr	1	.035	.027	9
Tchrscr	2	.035	.030	8
Sex	Female			
Peerscr	1			
Tchrscr	1	.042	.012	2
Tchrscr	2	.020	.013	5
Peerscr	2			
Tchrscr	1	.030	.026	3
Tchrscr	2	.035	.040	16
For entire sample:		.027	.030	99

* 1= low popularity status 2= high popularity status

** Peerscr= Peer popularity rating
Tchrscr= Teacher popularity rating

Appendix W

Multivariate Analysis of Variance

Effect: Race by Sex by Peer Popularity by Teacher Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0022	0.06	3.0	81.00	.980
Hotellings	.0022	0.06	3.0	81.00	.980
Wilks	.9977	0.06	3.0	81.00	.980
Roys	.0022				

Effect: Race by Peer Popularity by Teacher Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0205	0.565	3.0	81.00	.640
Hotellings	.0209	0.565	3.0	81.00	.640
Wilks	.9795	0.565	3.0	81.00	.640
Roys	.0205				

Effect: Race by Sex by Teacher Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0335	0.935	3.0	81.00	.428
Hotellings	.0346	0.935	3.0	81.00	.428
Wilks	.9665	0.935	3.0	81.00	.428
Roys	.0335				

Effect: Race by Sex by Peer Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0303	0.842	3.0	81.00	.475
Hotellings	.0312	0.842	3.0	81.00	.475
Wilks	.9697	0.842	3.0	81.00	.475
Roys	.0303				

Effect: Sex by Teacher Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0776	2.271	3.0	81.00	.087
Hotellings	.0841	2.271	3.0	81.00	.087
Wilks	.9224	2.271	3.0	81.00	.087
Roys	.0776				

Effect: Sex by Peer Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0342	0.955	3.0	81.00	.418
Hotellings	.0354	0.955	3.0	81.00	.418
Wilks	.9659	0.955	3.0	81.00	.418
Roys	.0342				

Effect: Race by Teacher Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0565	1.616	3.0	81.00	.192
Hotellings	.0598	1.616	3.0	81.00	.192
Wilks	.9435	1.616	3.0	81.00	.192
Roys	.0565				

Effect: Race by Peer Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0384	1.077	3.0	81.00	.363
Hotellings	.0399	1.077	3.0	81.00	.363
Wilks	.9616	1.077	3.0	81.00	.363
Roys	.0384				

Effect: Teacher Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0537	1.531	3.0	81.00	.213
Hotellings	.0567	1.531	3.0	81.00	.213
Wilks	.9464	1.531	3.0	81.00	.213
Roys	.0537				

Effect: Peer Popularity

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0642	1.853	3.0	81.00	.144
Hotellings	.0686	1.853	3.0	81.00	.144
Wilks	.9358	1.853	3.0	81.00	.144
Roys	.0642				

Effect: Sex

Multivariate tests of significance

Test Name	Value	Exact F	DF	Error DF	Sig F
Pillais	.0247	0.685	3.0	81.00	.564
Hotellings	.0254	0.685	3.0	81.00	.564
Wilks	.9753	0.685	3.0	81.00	.564
Roys	.0247				

ANNOUNCEMENT

An Oral Examination and Defense of the Dissertation:

Responsive Listener Behaviors of School Aged Children
In Relation to Academic Achievement and Social Attractiveness

by

Raymond E. Lechner

Will be held in a public forum at

Loyola University of Chicago
Lewis Tower
8th Floor Conference Room

Wednesday, February 6 1991
3 pm

VITA

Raymond E. Lechner began developing his research interests as an undergraduate at Northern Illinois University. Through an undergraduate honors program with Dr. Lynn Miller, he participated in a pilot study which documented for the first time the use of responsive listener behaviors in preschool children. This was followed by a more formal study which resulted in a publication appearing in Developmental Psychology (Miller, Lechner, Ruggs, 1985).

In an effort to pursue these research interests, Raymond enrolled in the School Psychology Masters Program at Northern Illinois University. It was at this time that interest in Developmental Psychology was further cultivated by Dr. Gwen Gustafson, who then served as chair-person for the next study, which provided the basis for Raymond's thesis.

Upon graduation in May 1986 Raymond began employment as a School Psychologist for the public school system in suburban Chicago; he is presently employed with Orland Park School District #135. It was during the Fall of 1986 when Raymond was accepted into a PhD program at Loyola University of Chicago. During his tenure at Loyola, Raymond earned state certification to supervise in his

field. Since earning this supervisory endorsement he has actively worked in the training of Intern Psychologists and university practicum students. He felt that a good field supervisor provided an important link between the theoretical basis gleaned by course work and the application of skills learned through internship and practicum experiences.

Raymond has also remained active in a state professional organization for School Psychologists, as he has earned continuing education awards every year since he was first certified as a School Psychologist in 1986. His interest in research has continued in the work place as well. Raymond has coordinated several school based research projects which evaluated program effectiveness. Raymond's personal interest in the development of listening skills was again advanced when he began a study which provided the foundation for his dissertation. Under the direction of Developmental Psychologist Dr. Carol Harding, Raymond has recently completed his most exciting study to date.

Dissertation Approval Sheet

The dissertation by Raymond E. Lechner has been read and approved by the following committee:

Dr. Carol Harding, Director
Chairperson, Counseling and Educational Psychology
Loyola University of Chicago

Dr. Jack Kavanaugh
Professor, Counseling and Educational Psychology
Loyola University of Chicago

Dr. Al Agresti
Asst. Professor, Counseling and Educational Psychology
Loyola University of Chicago

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

4/4/91
Date

Director's Signature